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Implementation of the Law on Food Control (SPS Compliance) and Food Standards

Final Report

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A Report of the Consultant
Anthony J. Whitehead[1]
On Activities Related to the
Implementation of the Law on Food Control (SPS Compliance)
April 30 through June 28 2000
Amman, Jordan

The scope of work for a planned mission to Jordan from April 30 through June 28 2000 is listed below. The report summarizes these activities carried out for each item below.

Continue to assist the Jordanian Institute of Standards and Metrology (JISM) in eliminating shelf-stable food from the existing shelf life standard (Working Party Report Paragraph 145 WTO/ACC/JOR/33 Paragraph 145).

The WTO Agreement on Technical Barriers to Trade (TBT) addresses all matters that relate to labeling requirements of food in international trade. The only exception is when food-labeling information is solely related to food safety issues. The WTO Sanitary and Phytosanitary Measures Agreement (SPS) addresses the content of safety information on labels. Shelf life information is not related to food safety but is related to food quality (TBT).

The internationally accepted standard for shelf life requirements is embodied in the food labeling standard of the Codex Alimentarius Commission (CAC): Codex General Standard for the Labeling of Prepackaged Food, (Codex Stan 1 - 1985 (Rev 1-1991). This standard applies to all international trade in pre-packaged foods.

This Consultant assisted the Jordanian Institute of Standards and Metrology (JISM) during this mission, including a review of the existing Shelf Life Standards, JS 288 and JS 401. The Standard JS 288 covers general food products. JS 401 is specific for the shelf life of products intended for infants. This review was made independently by the Consultant and later with the Standards Unit staff of JISM in a series of meetings arranged for this purpose. From this review, the Consultant recommended that food products identified in the JISM standards be divided into one of three categories:

- Category I - Those foods considered necessary by JISM within the context of Jordan to require a designated shelf life period;
- Category II - Identification of those foods considered shelf stable, based on international standards, or the shelf life is too short to be officially enforce (one or two days), or foods whose quality is obvious to the consumer at the time of purchase. Foods falling within this category are generally fresh

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vegetables, some fresh fruits, pastry products containing certain perishable fillings, products with egg based ingredients, fresh milk and fresh dairy products (non-cultured), chilled fresh meats, and any other perishable products with a shelf life of less than seven days or highly perishable products with a shelf life of less than three days.

- Category III - Identification of food products for which the food manufacturer or processor is the best source for the most appropriate estimate of the shelf life and would be responsible for the shelf life stated on the label.

Further, the standards should be reviewed to remove any text that does not conform to internationally accepted requirements.

JISM staff agreed with the Consultant recommendations. As a consequence, a revised shelf life standard was drafted with Category I products identified (approximately 40 different products in seven different food groups) and shelf life period specifically designated. Products determined to be in Category II as shelf stable, were listed as products that no longer are required to declare any shelf life information. If they do so, it is entirely voluntary. All other products are considered to fall within Category III and are to be removed from the Standard. Instead, all products not listed as in Category 1, are not considered as products in Category II and produced in Jordan are imported to Jordan must bear an expiration date as determined by the manufacture or processor. The JISM staff also made the changes necessary in the texts of the revised Standard to conform to international standards. An example includes the removal of a requirement that all products subject to the standard were required to have a minimum of one-half of the shelf life time remaining at the time of entry into Jordan.

The revised standard was proposed to the Technical Committee of JISM for their review and endorsement. After several meeting and serious debate, the Committee reluctantly agreed to endorse the revised standard. Jordan consumers have a long-standing tradition of utilizing shelf life information in their purchase decisions. Consumers perceive that out dated food products are not safe for consumption. MOH regulations prohibit the sale of outdated food. The final proposed standard is supported by international recommendations by the Codex Alimentarius Commission, the International Institution of Refrigeration, and other standards adopted at the national level by countries within the region.

Following endorsement by the Technical Committee, the revised standards were submitted to the Standards Board, the approving body for standards developed by JISM. A report of the Consultant's activities in this subject area was submitted to Amir and JISM.

Assist JISM in developing regulations and procedures consistent with international norms for highly perishable refrigerated foods to replace remaining shelf life standards.

As noted above, JISM, with technical assistance of the consultant, revised shelf-life standards to eliminate shelf-stable foods from coverage. As also noted, approximately 40 products remain subject to shelf life requirements. The consultant

began review of these remaining products to determine whether (1) such products were highly perishable and, if so (2) which remaining standards are inconsistent with international standards. This work will continue during the next phase.

Evaluate Jordan's current procedures for sampling, inspecting, and testing imported foods, and draft recommendations, consistent with Annex C of the SPS Agreement, to streamline the process. (Working Party Report Paragraph 149-WT/ACC/JOR/33 Paragraph 149) The recommendations should take into account the food inspection problems that the private sector identified in a May 2, 1999 and December 12, 1999 workshops sponsored by the a Amir Program, as well as the Amir Program recommendations to resolve these problems.

The Ministry of Health has sanitary measure regulations and instructions governing the handling practices in the transport, storing and display of food products. The existing instruction was subject of complaints from the private sector to the GOJ. The complaints related to procedure of measuring the temperature of the cargo of imported frozen foods using a manual temperature taking procedure. Rejecting the cargo was automatic if the temperature did not meet the minimum accepted international temperature of -18 degrees Centigrade. The rejection was based solely on the temperature measurement with no examination of the cargo, no sampling of the cargo to determine its compliance with safety and quality provisions of the standards, and without considering thermographic or computer-monitoring data of the temperatures recorded at hourly intervals during the entire time of the shipment period.

A Special Committee was appointed to review this matter and to report to the Council of Ministers for High Development chaired by the Minister of Planning with to make recommendations for resolving the issue. This Consultant was requested to serve as a technical adviser to the Special Committee. Members of the Special Committee also included the Ministry of Health, Food Safety Directorate staff, who are responsible for the policy. Several meetings were held in which the existing instruction was examined, international recommendations and standards discussed, and proposals made as a means to resolve the issue. This Consultant prepared a position paper related to the issue and recommended the use of the Codex Alimentarius Commission Standards for Frozen Foods, the International Institute Of Refrigeration recommendations related to transporting temperatures for chilled and frozen food, including meats and meat products, and the national policies of some countries within the region as a basis for formulating a revised instruction. The Special Committee adopted the recommendations of the Consultant, however relinquished control of the preparation of the revised instruction to the Ministry of Health.

This Consultant assisted the Ministry of Health in the preparation of the revised instruction. After several meetings at which several drafts of the revised documents were discussed, the Ministry staff revised and finalized the draft instruction for consideration by the Food Council. The specific requirements for the transport of imported frozen meat and meat products were incorporated in the General Instruction for the Transport, Storage and Display of food. This document was then submitted to the Food Council for Approval.

Although their is some question about the Council's action, the proposed revised instruction was published in the official Gazette and will come into effect in January 2001. Some members of the Council claim they did not approve the proposal, only agreed to continue to review the matter for future consideration and the publication in the Gazette was premature. A review of the final instruction was made and a report prepared identifying some provisions, which may result in trade barriers if implemented. This matter will be the subject of continuous monitoring into future missions until the issue is resolved.

In addition to this work on the Ministry of Health's sanitary measure regulations and instructions governing the handling practices in the transport, storing and display of food products, the consultant had numerous discussions with JISM, Ministry of Health, some staff of the Minister of Agriculture and the private sector related to the handling of import food products entering Jordan. The majority of imported foods enter Jordan through the port of Aqaba. Some imported products arrive by air shipment at the Amman airport. A Customs Committee made up of representatives of each of the relevant ministries (Minister of Agriculture, Minister of Health, Customs, JISM, and Agriculture Marketing Organizations of the Minister of Agriculture) makeup a team of employees responsible for examining and collecting samples of imported food. Custom Committees exist at each port of entry to Jordan with two committees located at Aqaba, the primary port of entry in Jordan. Food safety samples are submitted to the MOH Aqaba or Amman laboratories for analysis, the Amman laboratory for the Ministry of Agriculture for pesticides, chemical and veterinary drug residues (meats), or to JISM laboratories for compliance with Standards requirements. Approximate 20% of all imported samples are submitted to the Aqaba Laboratory and 80% submitted to the Amman Laboratory, adding more time to the import product clearing time.

During this mission, the Consultant visited Aqaba for a first-hand review of the import handling procedures. An assessment was made by the Consultant of all aspects of the import procedures from document submission to final release or rejection. In addition, a preliminary assessment was made of the MOH Aqaba laboratory's capability, employee training needs, equipment needs, and their operating procedures and methods.

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Among the many areas of the Jordanian import procedures, which can be streamlined, is the policy of 100 percent inspection of all imported food and rejection of imported foods without sample analysis that confirms violations of international standards. In addition, there is a double standard within Jordan related to food control of imported foods and domestically produced foods. Measures exist which would be considered as trade barriers and subject to dispute under the WTO dispute mechanism. These are principally policy issues and must be dealt with at the highest level within the Ministry. The Consultant, consequently, prepared a number of documents that explains modern approaches to import food controls. Among those documents includes a document entitled "The Concept of Selective Sampling of Imported and Domestically Produced Food Products" and another document entitled " A Risk-based System of Food Control in Jordan". Each of these documents describes alternative methods to the 100 percent sampling program. MOH annual reports for 1997, 1998, and 1999 include the results of analysis for 70,000 or more samples per year of which

65-70 percent are import samples, indicating a total defect rate of less than one percent. A significant amount of resources is being spent needlessly for the level of protection. Utilizing a risk-based system and selective sampling programs would allow the same level of protection currently provided under the 100 percent policy without the excessive cost of the program.

The Ministry of Health has established a working group within the Food Safety Directorate for the review of procedures, policies and regulations/instructions for determining those that require reform and revision to comply with international standards. This Consultant is assisting this working group in this endeavor. To date, only one meeting has been held by this group for organizing the work. However heavy workload at the MOH has prevented any further progress on this task.

The Consultant has recommended to Amir that a brochure be prepared which describes in layman terms the steps to be taken for successful importation of foods to Jordan including basic requirements, handling procedures, standards and transportation requirements and contact information for problem resolution.

During subsequent missions, the Consultant will attempt to elevate the decisions and involvement of higher Ministry management in the reform process of the policies, procedures and regulations of the Ministry. Activity under this task will continue into future missions.

Assist JISM in establishing and conducting working groups to review mandatory standards related to food for replacing mandatory standards with either voluntary standards or technical regulations consistent with the WTO TBT Agreement. (Working Party Report Paragraph 137-WTO/ACC/JOR/33 Paragraph 137.)

The Standards Board designates standards prepared by JISM and submitted for approved as either mandatory or voluntary standards at the time of approval. In preparation for the eventual conversion of most all standards to voluntary status, JISM has reduced its role in enforcement of the standards in favor of assisting industries to comply and to providing certification services of product conformity to Jordanian and international standards.

Due to the considerable amount of work necessary to revise the current food standards related to shelf life, little time could be devoted to the review of all food standards for categorizing them as voluntary or mandatory. The Consultant volunteered to provide JISM with criteria for determining mandatory and voluntary food standards to facilitate this review. In addition, the Consultant has already reviewed some 50 different standards to assess the scope of the task and to predict the level of outcome of conversion from mandatory to voluntary.

This task will be continued into the future missions.

Assist MOH in developing and implementing a program for identifying SPS measures inconsistent with international standards and for determining, based

on scientific evidence, where higher protection may be kept. (Working Party Report Paragraph 151-(WT/ACC/JOR/33 Paragraph 151)

As indicated in the paragraphs above, the MOH has a working group established for reviewing existing policies, produces, regulation or instruction for conformity with WTO requirements. Little time has been spent on this task due to heavy workload and other pressing matters that related to the transportation requirements for imported frozen foods. The Consultant intends to develop potential criteria that will assist the working group in their review.

It will also be suggested to the Ministry of Health that a specific unit or individuals be appointed to oversee the reform of food control and policy matters related to WTO activities. Under the current circumstances, Food Safety Directorate staff members are the only personnel available to proceed with this endeavor. This unit is short staffed and overburdened with work permitting less time for the types of activities required to implement the reforms of these procedures.

Activities related to this task will be continued into future missions.

Provide education to importers and exporters on new procedures.

As a result of there being no changes made in the import procedures to date, education of the shippers and importers was considered to be premature. The Consultant, because of considerable contacts with industry representatives, recognized a need for industry to have a general orientation into the World Trade Organization's activities, the meaning of being a member of the organization, its obligations and requirements, and the requirements of relevant agreements. At the same time, during this orientation, discussions could be held related to the types of reform being considered, those in process, and those that have been completed in order to provide information related to the background of these activities, the need for such changes and for the anticipated outcome.

The Consultant met with the Business Association Component Chief-Amir and, with their cooperation, workshops were planned and carried out during this mission. The host Jordanian institution was the Chamber of Commerce Organizations in each of the sites in which the Seminars were held. These organizations and other private sector associations were invited to attend the seminars. Seminars were held in Irbid, Zarqa, Aqaba and Amman. Each seminar was well attended. The programs were identical in each location. The first presentations consisted of explanation of WTO Agreements related to food quality and safety, the disciplines established within the agreements and the obligations of membership in the WTO. This was followed by a presentation on the existing systems in Jordan related to food control, the reforms needed, the activities currently underway and the difficulties in accepting change. Question and answer sessions followed each of the major presentations. Discussions were in depth and reflected concern for the continuation of the policies considered in many cases to curtail progress in the food industry.

The Consultant will continue with industry liaison in order to keep them informed of the progress toward food control reform. Upon the completion of the streamlining

procedures for import controls, seminars for educating the private sector will be developed and carried out.

Preliminary Assessment : Ministry of Health[2] - Aqaba Food Testing Laboratory

May 30, 2000

During a visit to Aqaba, Jordan from May 29-31, 2000 as a part of the assessment of the controls and sampling procedures for imported food products under the Investor Road Map, this Consultant visited the Ministry of Health Food Testing Laboratory, among other activities. During this visit, and at the request of AMIR, a preliminary assessment was made of the capability, capacity and needs of the laboratory operation. In addition, within the limits of the time constraints, some information was obtained concerning the need of equipment, and personnel training. During this visit, discussions were held with the Director of the Laboratory, Dr. Abdul-Rahman Shokini, and other members of the staff. The following information is reported.

The Laboratory is located about 10-12 kilometers from the Port of Aqaba. The building is entirely dedicated to the laboratory facilities. The Laboratory is officially a laboratory of the Ministry of Health and is responsible for the analysis of food products delivered to the facility for that purpose. Food samples represent products from both domestic and imported sources. There are 11 professional employees on staff. Two are qualified as Veterinarians and eight have BA - MA degrees in food sciences. Non-professional staff is employed as assistants and provides services within the laboratory context.

The laboratory has four sections. Each section is designated for specific analysis and test. They include general appearance examination and testing, microbial, chemical and aflatoxin analysis. The type of testing and the capability of the laboratory are as follows for each section.

> **General Appearance:** This testing consist of physical inspection of the product for general appearances of the product for obvious defects or evidence of contamination. Testing is done to check the color, odor and consistency of the product compared to expectations for the product. Other testing includes rancidity testing for oil and fat containing products, evidence of filth, (insect, rodent or other vermin contamination) and the presence of parasites.
>
> **Microbial:** The laboratory has a fully functional microbial laboratory that includes the preparation of bacterial growth media, sterilization equipment and incubators. Commercially available nutrient materials are used for the growth media. A High Efficiency Particle (HEPA) filtration hood was also observed. According to the section head, the laboratory routinely tests of Clostridium botulinium, Bacillus cereus, Escherichia coli, Aspergillus ssp, Staphylococcus aureus, Streptococcus, Salmonella, Coliform, and Total Bacterial Counts.

[2] Prepared by Anthony J. Whitehead
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Chemical: The laboratory is equipped with an Atomic Absorption Analytical instrument with flame detectors, and routinely tests for common heavy metals and inorganic chemical contaminants. Other chemical analyses are extremely limited due to the lack of analytical instruments. A functional laboratory for food analysis should have the capability to perform organic chemical contaminants and particularly analysis for pesticides residues, animal growth promoting hormone residues and residues from other veterinary drug treatment of animals. Analysis for these contaminants require Gas Chromatography (GC), Spectrophotometric instruments, including Mass Spectrophotometric (MS) analytical instruments. Training for the personnel will be required in performing these complex analytical procedures.

Aflatoxin: The laboratory has the capability to detect Aflatoxin B_1 and B_2 and G_1 and G_2. These toxins are associated with the Aspergillus mold. Detection of other toxins from mold is not within this laboratory capability, including the toxin M_1 and M_2 and Ochratoxin.

During 1999, this laboratory performed analysis of about 15,200 total food samples. Nearly all received some level of examination and testing for general appearances. A total of 7,300 samples were tested for microbial contaminants, 5,300 samples were tested for chemical contaminants, and 2,500 samples were tested for aflatoxin toxin. This laboratory accounts for about 20 % of all samples analyzed from import sources and from 1 to 2 % of the domestic food products tested in Jordan.

The Jordanian Ministry of Agriculture chemical laboratory in Amman routine performs chemical testing for the Ministry of Health, including pesticide, hormone, and veterinary drug residues. The Ministry of Health laboratory in Amman performs nearly 80% of all imported food analysis in Jordan.

The Aqaba MOH laboratory is not well equipped to perform modern food analysis. Professional employees need training in current analytical methods of analysis for food, particularly in the use of instrumental analysis. These methods are more accurate, have a higher level of sensitivity and are more efficient. The MOH laboratory is suitable placed (close to the Port in which most food imported products enter Jordan) and therefore should be a fully operational laboratory with the capability to perform all food analysis. The laboratory has sufficient space to permit the expansion of its current capability, and would permit the streamlining of the import procedures related to analytical testing of imported food. No quality assurance system is in place and the procedures meet only a portion of the "Good Laboratory Practices" required for acceptable performance.

Recommendations

The laboratory should be subjected to a complete assessment by a qualified laboratory consultant to determine what is needed to bring this laboratory to the level of a fully functioning food safety laboratory that meets internationally established standards.

The assessment should include an evaluation of the current methods used, the equipment and instrumentation needed, and training needs of employees, to improve

the capabilities and subsequently the quality of work performed, including the implementation of an internal laboratory quality and safety assurance programme.

A system of laboratory management should be implemented that establishes a regulatory approach to the handling of samples, procedures to be followed to assure the integrity of the analytical process and the accuracy of reporting results.

The capacity of the laboratory should be increased to effectively carry out the full analytical workload for imported food products entering Jordan at the Port of Aqaba. The workload should be based on a reduced level of monitoring in keeping with a risk-based system of import food control that focuses on high and moderate risk foods, as opposed to a 100% control level.

A Report To the Jordanian Institution of Standards and Metrology On a Review of the Standards Related to Food Shelf Life

Prepared by
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May 3 2000

Background

The Government of Jordan (GOJ) was accepted as a member in the World Trade Organization (WTO) in December 1999. A number of changes in the legal framework, rules, regulations, procedures, inter alia, related to food control measures were required by the Working Party (WP) of the WTO and the GOJ committed to making these changes. Among the changes agreed to by the GOJ was to revise the existing mandatory requirements of the Jordanian Shelf Live Standards to eliminate food products considered to be shelf stable products. Exception was taken by the WP for the existing Food Shelf Life Standards (JS 288 and JS 401) due to the prescriptive requirements of these standards. These standards prescribe specific shelf life time periods for various foods and food groups, without acknowledgement that the shelf life may vary from manufacturer to manufacturer, country to country, and is highly dependent on the technologies employed, use of approved preservatives and other preserving and processing techniques. In addition the standards also declare that any product imported into Jordan must have a minimum of one half of the shelf life left at the time of the importation, otherwise it will be refused entry.

The Jordanian Institution for Standards and Metrology (JISM) is the responsible and competent authority in Jordan for establishing standards for all products, including food products, and methods of measurement. In view of the commitment made by the GOJ to the WTO related to shelf life standards, JISM began the process of developing a revised standard for the shelf life of commonly produced and imported food products.

[3] May 3 2000
[3] Prepared by Anthony J. Whitehead
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The consulted is an international food control expert with 40 years of practical and operational experience, serving in various positions of responsibility in the United States Food and Drug Administration for nearly 30 of those years. He served as a Senior Officer for 7 years as the food quality and safety focal point in the Food and Agriculture Organization of the United Nations, Rome, Italy. Areas of responsibilities included providing technical assistance to 75 or more developing countries on food control matters on subjects ranging from management of food control programmes, and organizational, policy, legal, procedural and operational activities. He served as Chief of the Joint FAO/WHO Food Standards Programme, Supervised the activities of the prestigious FAO/WHO Joint Expert Committee on Food Additives and Contaminants, Secretary to the Codex Alimentarius Commission and FAO Senior Liaison Officer for food safety to other UN agencies (WHO, WTO, UNEP, IAEA,) and international trade organizations including EU, NAFTA, ASEAN, OECD, MERCSUR). He has spoken at more than 100 international scientific meeting and published 150 or more papers on food control related subjects

The AMIR-Jordan Project, a project funded by the USAID, is providing technical assistance in a number of important areas including Policy Reforms necessary for Jordan to conform to trade agreements of the WTO. This Consultant was requested to provide technical advice to JISM on a number of issues related to food standards, including the shelf live standard revision.

WTO Relevance to Food Shelf Life

All matters that relate to labeling requirements of food in international trade are addressed in the WTO Agreement on Technical Barriers to Trade (TBT). Shelf life information is related to the longevity of a food product's quality attributes under usual or specifically described storage conditions, also on the label. Requirements to include shelf life information on food labels for food in international trade are consequently governed by the requirements of the TBT agreement.

The only exception is when food labeling is included on the product label, which are solely related to safety issue, such as consumer warnings. An example of such a safety labeling warning would be specific instructions to cook the food for a specific amount of time at a specific temperature level to insure a safe food product as a result, for food which otherwise would be considered a high food safety risk if not prepared according to the instructions.

International Standard for Shelf Life

The internationally accepted standard for shelf life requirements is embodied in the Food Labeling standard of the Codex Alimentarius Commission (CAC): Codex General Standard for the Labeling of Prepackaged Food, (Codex Stan 1 - 1985 (Rev 1-1991). This standard applies to all prepackaged foods defined as food packaged or made up in advance in a container, ready for offer to the consumer, or for catering purpose (food used in restaurants, canteens, schools, hospitals and similar institutions where food is offered for immediate consumption). The Standard requires the date marking and storage instruction to be declared on the label as the "date of minimum durability". This is defined as the date that signifies the end of the period under any stated storage condition during which the product will remain fully marketable and will retain any specific qualities for which tacit or express claims have been made. However, beyond the stated date, the quality of the food may still be perfectly satisfactory. The terms "best before" followed by the date is generally referred to as the date of minimum durability. Specific instructions are provided in paragraph 4.7.1 (i) of the CAC standard related to labeling formats.

The Codex Standard does not prescribe the shelf life of any food products, leaving the shelf life declaration on the label to the manufacture, who is more knowledgeable of the product shelf life under various conditions of storage and handling.

Approach

The assistance provided by AMIR included the services of this consultant and included a review of the existing Jordanian Food Shelf Life Standard (JS 288 and 401). The review was made independently by the Consultant and later with the

Standards Unit of JISM in a series of meetings arranged for this purpose. From this review, food products were divided into one of four different categories:

- Those food for which shelf life is considered necessary within the Context of Jordan;
- Identification of those foods which are considered shelf stable foods and need no regulation, on the basis of international standards, the shelf life is too short to enforce (one or two days), and the food quality is obvious to the consumer at the time of purchase;
- Identification of food products for which the food manufacture or processor is best source for the most appropriate estimate of the shelf life and would be responsible for the shelf life stated on the label; and,
- Finally to identify other requirements (text) of the standard which require revision to conform to international standards.

Review and Overall Findings

A meeting was held with Ms Rula Madanot, Director of Information Center, on February 2, 2000, for general discussions related to shelf life standards, to identify the necessary documents to be involved in the review and to decide on the appropriate course of action. Complete cooperation was promised and provided. A meeting was set up with the Standards Unit for 6 February at which time the Unit would advise on the status of a revised food product shelf life standard currently under development. During that meeting the Standards Unit provided a draft copy of the revised shelf-life standard, which was in the early stage of development. The consultant promised a review and comment as soon as possible.

The international standard of CAC excludes specific foods from the standard, including the following:

- Fresh fruits and vegetables, including potatoes, which have not been peeled, cut or similarly treated;
- Wines, liqueur wines, sparkling wines, aromatized wines, fruit wines and sparkling fruit wines;
- Beverages containing 10% or more by volume of alcohol;
- Bakers' or pastry-cooks' wares which are normally consumed with 24 hours of their manufacture;
- Vinegar;
- Food grade salt
- Solid sugar;
- Confectionery products consisting of flavored and/or colored sugars;
- Chewing gum.

The above products are considered either shelf stable by virtue of their characteristics, or their shelf life is too short to allow for any meaningful official control, and/or the quality attributes of the food is easily observable or obvious to the purchaser at the time of purchase, i.e. fresh fruits and vegetables.

JISM has two standards, which relate to shelf-life requirements; JS 288:1994, Foodstuff-Shelf life of Foodstuff and JS 401: 1997, Foodstuffs - Shelf Lives for Infants and Children's Foodstuff.

As a result of the review, the consultant recommends:

- The listing of all food products formerly identified in the JS 288:1994, with an explanation that these products are Shelf Stable and no longer require any shelf life. Shelf life statements by the manufacture or processor are voluntary and if used must comply with the specific requirement of the sections of the standard that apply to declaration of the format, placement and text. **(List 1)**;

- The removal of all food products formerly identified in the JS 288:1994 for which the manufacture or processor will be responsible for establishing the shelf life for their products. The text of the standard should indicate that any product not listed in the standard is to have a shelf life as determined by the manufacture or processor. Declaration of this date is mandatory but is only enforceable if not declared. Label declaration must comply with the specific requirements of the sections of the standard that apply to declaration of the format, placement and text;

- Retain those food products that are considered necessary to have proscribed shelf life in the context of Jordan's situation. JISM should consider the recommendation of the Consultant to revise the shelf life periods for those which are indicated for change, for consistency with other similar products, and other regional and international recommendations, **(List 2)**;

- Make the necessary changes in the text of the standard to cover the changes and to update the overall food shelf life standard.

List 1 (shelf stable products include: products with too short of a shelf life to be enforced (such as one or two days); products which the consumers can evaluate the quality at the time of purchase; and, product exempted from shelf life requirements standards by international accepted and recognized standards.

The following listed foodstuffs are recommended for removal from the from JS 288 Food Shelf Live Standard. No shelf life declarations should be required for these products from either domestic or foreign sources. Manufactures and suppliers may wish to apply such labeling information voluntarily, however no enforcement of the stated dates should be undertaken on the basis that the date is exceeded.

White granulated sugar
Powered sugar (sucrose)
Dried and liquid glucose
Honey
Molasses

Confectionery products consisting of flavored and/or colored sugars
Table salt (sodium chloride).
Table salt combined with citric acid powder
Dried vegetables
Fresh vegetables, including potatoes (which have not been peeled, cut or similarly treated)
Dried or processed herbs
Fresh herbs
Dried or processed spices
Fresh spices
Natural vegetable starches (i.e., potato starch, rice starch, cornstarch)
Chicken and other poultry Eggs
Salts and approved chemical and additive for food use in processing of foodstuffs
Raw gums
Dried legumes (except when cooked or canned)
Dried uncooked cereals and grains (rice, wheat, barley, corn, popcorn, etc.)
Green coffee beans (un-roasted)
Dried black tea leaves or pieces
Dried Green tea leaves or pieces
Dried condiment (powders, granules, pieces, whole)
Pure virgin olive oil (sweet, domestic and imported)
Un-roasted nuts and like products
Wines, liqueur wines, sparkling wines, aromatized wines, fruit wines and sparkling fruit wines
Beverages containing 10% or more by volume of alcohol
Bakers' or pastry-cooks' wares which are normally consumed with 24 hours of their manufacture
Vinegar
Canned vegetables
Canned fruits
Powder fruit drinks
Dates
Date syrup
Manufactured and whole preserved fruit manufactured with sugar
Kamar Al-Din Malban
Vegetable gee and hydrogenated oil
Fresh mushrooms
Canned Tuna
Canned Sardines with oil
Canned Sardines without oil, with vegetables
Canned Anchovies with oil
Anchovies with oil in sterile glass jar pack
Canned Mackerel without oil
Canned Mackerel in oil
Canned Salmon
Canned meats (luncheon meat, corned beef, and goat meat, beef meat, canned meat with vegetables, minced meats, sausages)
Chilled Fresh meat
Fresh Chicken, rabbits, Duck and Goose

Fresh internal hen organs
Flour
Biscuits (plain, stuffed or coated)
Macaroni
Cereals (corn flakes)
Bread
Candy (toffee, Gums, hard candies and drops, almond candies, cake decorations made of sugar vanilla powder, liquid vanilla)
Chewing gum
Frozen fruit Pulp*
Canned Fruit Pulp*

*These products appear to be commercial products and not for direct sale to consumers. If this is the case, then they should be removed from the standard.

Products to be removed from the Standard (manufactures to determine the shelf life period)

Frozen fruit
Frozen vegetables
Frozen fruit drink
Fruit juice
Natural juice and fruit nectar (canned or glass pack container types)
Flavored drinks (all container types)
Carbonated beverages (non-alcoholic)
Beer
Water (mineral and drinking water)
Tomato Puree, packaged peeled and un-peeled tomatoes and tomato paste (all container types)
Ketch-up
Triple tomato paste concentrated (all container types
Tomato juice
Pickles, canned or glass packed sterile jars
Stuffed dates
Canned mushrooms
Vegetable cream
Whole egg powder
Egg white powder
Egg yolk powder
Mayonnaise
Canned evaporated condensed or concentrated milk
Canned sweet condensed milk
Canned margarine
Canned and glass packed Milk gee
Canned dried milk
Dried milk (vacuum packed)
Canned cream

Cream (other package type)
Long term sterilized vegetable cream
Canned cheese
Sesame, peanuts sweet made nuts
Coconut candies
Naught
Turkish delight
Cocoa powder (canned)
Cocoa powder (bagged)
Powdered instant coffee (all container types)
Ground roasted coffee beans
Plain chocolate
Sweeten chocolate
Chocolate candy bars
Vanilla powder
Liquid powder
Cake (canned)
Cake (paper wrap)
Instant soup powders
Frozen cooked foods
Frozen dough chips
Frozen dough chips with cooked meat
Appetizers and sauces
Dried soup powders
Dried custard powders
Salted roasted nuts

List 3 (retained products on the shelf life standard with some recommended changes in time proscribed shelf life)

Canned Foul Medamas		24 months
Canned Chickpeas with tehena		24 months
Natural juice and fruit nectar (tetrapak)		9 months
Natural juice and fruit nectar (transparent containers)		4 months
Cold-Smoked fish -18°C		12 months
Hot-Smoked fish -18°C		12 months
Cold smoked fish 0 to 4°C		7 days
Hot smoked fish 0 to 4°C		7 days
Hot smoked fish (vacuum packed)		15 days
Frozen fatty fish -18°C		6 months
Frozen non fatty fish -18°C		12 months
Shrimp and shellfish -18°C	Change to	12 months
Salty dried fish 0 to -5°C		12 months
Fish without internal organ -18°C	Change to	12 months
Smoked fish with internal organs -18°C	Change to	12 months
Fish preserved in brine 0 to -5°C		12 months
Sardines with oil -18°C		12 months
Minced beef meat -18°C	Change to	12 months
Fresh sheep and goat meat -1 to 7°C		14 days

Fresh beef meat -1 to 7°C		14 days
Frozen sausages`-18°C	Change to	12 months
Pastrami	Change to	9 months
Chicken, Rabbits, Duck Goose -18°C		12 months
Chicken and Turkey -18°C	Change to	12 months
Carcasses and parts of sheep meat -18°C		12 months
Sliced mortadella Vacuum packaged 0 to -4°C	Change to	21 days
Minced meat w/salt, onions (hamburger) -18°C	Change to	6 months
Internal hens organs -18°C	Change to	6 months
Internal beef and goat organs 0 to -5°C		6 days
Internal beef and goat organs -18°C		6 months
Internal beef and goat organs -1 to -4°C	Change to	6 days
Minced sheep meat -18°C	Change to	12 months
Chunk sheep meat -18 °C	Change to	12 months
Chunk beef meat -18°C		12 months
Lasagna with egg		12 months
Teheni		12 months
Canned Halawa tehenia		12 months
Halawa tehenia		6 months
Frozen Butter -18°C		12 months
Chilled butter 0 to 5°C		3 months
All sorts of cheese		12 months
Aged cheese	Change to	12 months
Margarine (wrapped in special paper)		3 months
Milk gee (not canned or bottled)		12 months
Long term milk		6 months
Pasteurized fresh milk -6 to -8°C		3 days
Milk and Cream ices -18°C		12 months
Labneh 0 to -5°C		15 days
Labneh with oil 25°C		4 months
Labneh for storage with oil 4°C		6 months
Long term labneh (refrigerated)		4 months
Yogurt (refrigerated)		7 days
Fresh yeast 2 to 10°C		1 month
Active dried yeast (canned, glass and plastic w/inert gas		24 months
Active dried yeast without inert gas non-vacuum packed		6 months
Pies and sweets		2 months

Required TEXT changes in JS 288

3.3 should be eliminated. Any product that is offered for entry into the Kingdom must meet the mandatory requirements of law and regulations. This means that a product for which the standard has a proscribed shelf life must meet that requirement. So if the shelf life is less that it must be increased to the stated level, and if more than the proscribed shelf life it must be reduced. Therefore the product must be relabeled or the label corrected in a manner suitable to the food control authority and within the

requirements of law and regulations. This can be stated in place of the text presently in this paragraph.

3.11 should be eliminated. This standard is a guideline to the trade and specifies what is required for the product to meet specifications of quality. It should not address the regulatory aspects of violations and these matters are left to technical and regulatory regulations issued by the food control authority appoint to enforce the law. The sale of the goods has nothing to do with the quality of the goods or the goods having met the requirements of the standard.

3.16 should be eliminated since the standard is not a regulatory instrument consequently should not direct that regulatory action be taken. This is a matter to be addressed under technical regulations and based on legal requirements of the law.

Comments on JS 401:1997, Foodstuffs - Shelf Lives for Infants and Children's Foodstuff.

3-1 this group of paragraphs does not state the product can be labeled with a "Use before" or "Sell by" date. It should be structured much the same as the section on #-1 for JS 288:1994

3.3 should be eliminated. Same comments apply as above for 3.3 of JS 288:1994

3.4 should be eliminated since there does not appear to be any products covered in the standard in this category and all products listed have proscribed dates

3.6 should be eliminated. It is a trade barrier and restricts imported products only.
3.7 This text should be rewritten as indicated my the Consultants comments on 3.3 of JS 288:1994

3.8 may need to be reworded in view of re-manufacturing/re-labeling of mislabeled products to bring a product into compliance before entry into Jordan

3.11 should be eliminated. This is a regulatory issue and is not appropriate in a standard

3.12 should be eliminated. This is a regulatory issue and is not appropriate in a standard

Draft

Regulation for the Transportation Of Imported Frozen Meat[4]

The Minister of Health has rendered the following decisions related to the transportation of imported quick frozen meat while a complete review is made of existing Jordanian standards and health regulations regarding the transportation, storage and holding conditions of quick frozen, fresh chilled and refrigerated meat from any source including imported and domestically produced. This decision effects the previously issued Regulation for the transportation of Imported Frozen Meat dated 1/1/1994

Background:

The Minister of Health issued regulations dated 1/1/1994 related to the conditions and requirements for transporting imported frozen meat to Jordan. The implementation of this regulation has been a source of concern by exporters, frozen food product shippers, importers and Jordanian meat processors. They have expressed their concerns as follows:

- The Jordanian food standards for frozen meats requires that frozen meat be maintained at -18°C throughout the entire time of shipment and until distributed to the consumer or ultimate user. A health regulation is in effect from 1/1/1994 permitting a deviation of +3°C or a range from -18°C to -15°C for transportation of Imported Frozen Meat. Import consignments of meat are made in containers equipped with refrigeration/freezer units capable of maintaining the standard temperature with temperature monitoring and recording devices providing thermograph documentation of the temperature maintained during the shipment period. This temperature is a measurement of the temperature in the air return circulation of the air in the container and can reasonable be expected to reflect the temperature of the cargo.

- The Committee representative at the Customs Center, responsible for examining imported consignments of frozen meat, takes a measurement of the temperature of the consignment according to Ministry instructions. The policy of the ministry has been to use the highest temperature levels from the recorded thermograph records or any temperature probes or the manual temperature recorded by the Sampling Committee representative. The consignments are rejected without testing based on a high temperature

[4] Prepared by A. Whitehead
Consultant - Food Safety
March 2, 2000

record of -14.5°C or higher. According to the private sector there have been a considerable amount of money lost to all parties in the number of rejected frozen meat consignments and this cost is passed on to Jordanian consumers in the price of meat products of accepted shipments.

- Whenever a power source interruption for a refrigerated container storing or transporting frozen meat is for a period more than 6 continuous hours, it has been the policy of the Ministry to reject those consignments without any testing. The private sector has expressed their concern for the continuation of his policy as well.

- A related issue of concern is the impact of these policies on the cost of frozen food consignments. The private sector reports that frozen food shippers and transporters are refusing to ship frozen food products to Jordan on the basis that they may become involved in disputed consignments rejected for not being maintained at appropriate temperature during shipment. This occurs even though the recording thermograph shows little to no deviation from the acceptable standard temperature. As a result, those shippers that do ship to Jordan are extracting significantly higher shipping fees than that charged for shipping to other nearby countries.

- Other issues were expressed but are not within the scope of these regulations. The other issues concern:
  - Lack of available space at the Port of Aqaba for sample handling and preparation;
  - Size of samples taken by the Committee;
  - Policy of sampling each consignment on bases of either the daily or monthly production dates markings;
  - Lack of formal appeal process of ministry decisions that result in the rejection of consignments.

The Ministry, in an effort to seek appropriate advice and council on the scientific merits of the temperature limits established in the Jordanian standards and the subsequently issued health regulations requested guidance from the World Health Organization (WHO) and the Codex Alimentarius Commission (CAC). The Jordanian Standard temperature requirements are consistent with the guidelines and recommendations of the Codex Alimentarius for shipment and storage of frozen foods The CAC provided needed background information related to the relative importance of the temperature limits to food safety issues.

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The Ministry received advice from the WHO to address the issues with the International Institution of Refrigeration (IIR), Paris. The IIR is an international intergovernmental organization providing members with international expertise in use of refrigeration in food preservation. The IIR:

- Provides information on appropriate shipping methods for frozen, chilled and refrigerated products;

- Develops international technical standards for shipping containers and temperature measuring and recording devices;
- Provides the results of research on food safety issues related to refrigeration and freezing techniques and methods;
- Conducts training and scientific seminars and workshops; and.
- Renders assistance in resolving complex problems related to frozen and chilled food product handling.

The IIR provided the Ministry with recommendations for changes in the current policy.

In June 1999, the Danish Ministry of Foreign Affairs in cooperation with the Royal Danish Consulate General sponsored an awareness seminar of the Shipping of Frozen and Chilled Foodstuffs in Reefer Containers, in Amman, Jordan. Presentations made by refrigeration and food safety experts during this seminar pointed out certain scientific evidence worthy of consideration. The data presented:

> Reflected up-dated information on the international requirements for construction and temperature maintaining efficiency characteristics of reefer container construction. Reefer containers meeting these requirements and constructed within the past 5 years are far more efficient and effective in temperature-holding capacity with little to no temperature deviations in the cargo for periods upwards to 24 hours without electrical power supply when maintained appropriately.
>
> Information that related to the improved specifications and internationally standardized requirements for temperature monitoring devices used to monitor and to record the temperatures of reefers during shipment.
>
> Food safety information on frozen foods at higher temperatures, up to -10°C, in which safety is not a factor and for there to be no detectable decline in quality when used within acceptable shelf life periods.

Additional seminars were held in Amman by the Ministry of Planning in December 1999 and by the AMIR-Jordan Project, supported by USAID, also held in December 1999. These seminars addressed the concerns of the private sector on these issues and resulted in recommendations made by those in attendance. A special session was held of the Ministerial High Development Council in February 2000, in which the concerns were voiced by the private sector and resulted in the appointment of a special scientific technical committee to review and recommend appropriate action to the Council at the earliest possible time. A food safety and standards expert serving as a Consultant to the AMIR-Jordan Project, assisting Jordan in the accession process to the WTO, agreed to serve as an a international technical expert advisor to the Special Scientific Committee, when requested by the Chairperson of the Council.

Findings of the Committee

The committee reviewed the information at hand. The following considerations were taken into account in considering the authoritative international information provided by the international organizations involved as follows:

The Codex Alimentarius states the recommendations on temperature limits are contained in the Code of Practice for the Processing and Handling of Quick Frozen Foods (CAC/RCP - 8 1976) and its Annexes. It was developed by the Joint United Nations Economic Commission of Europe (UN/ECE) and the Codex Group of Experts on the Standardization of Quick Frozen Foods (Joint UNECE/Codex Committee). It was integrated with the UN/ECE Transport Division and in particular the "Agreement on the Transport of Perishable Products" (ATP), the provisions of which establish the standards for the container and temperature monitoring devices according to ISO standards.

The following considerations were taken in developing the temperature limits in the Codex standards:

At the temperatures used commonly in the process of freezing food products (from -12°C to -35°C), the "question of microbiological safety is non-existent".

Temperature fluctuations appear to be a factor in the quality of frozen meat. For instance, storage at a steady and stable temperature of -15°C is better than storing at -18°C. if the temperature is fluctuating up and down a few degrees either way. Frozen fruit and vegetable quality is effected far more than frozen meat by temperature fluctuations.

Frozen meat quality is effected by temperature fluctuations and result in drip in the thawed meat, and increased shrinkage on cooking, each of which are considered to be quality factors and do not effect the meat food safety factors.

The Codex Code of Practice applies to Quick Frozen Foods in general and primarily for fruits and vegetables to assure optimum levels of freshness and maturity. The Codex Code of Hygienic Practices for Fresh Meat (CAC/RCP 11-1976, revised in 1983) covers frozen fresh meats but does not specify storage temperatures.

The Codex Code of Practice for Fish and Fishery Products, a code currently under development within the Codex system, incorporates all of the 14 previously existing codes for frozen fish and fish products. At the present time is does specify -18°C with a tolerance of +3°C (up to -15°C) for transport purposes, however the code is not yet final and the final text may or may not be different when adopted.

The Secretariat of the Codex Commission advises that the Quick Frozen Food Code was developed with the temperature limits as an inspection procedure to assure transport operators should not operate at the lower levels of the margin of safety. There is no microbiological safety problem for frozen meat and meat products up to and including temperature levels of -12°C to -10°C.

> The temperature limits were not intended as a quality control procedure. The Secretariat of CAC advises that the "whole procedure is a QUALITY and not a SAFETY operation: this is clear in the wording of the Annex 2 of the Code. The developers of the standards never intended the inspection of the frozen food using temperature solely as a criterion for acceptability because of its disruption to trade and the resulting unnecessary destruction of acceptable safety food product.

The Special Scientific Technical Committee also considered the information presented during the June 1999 Awareness Seminar related to the Shipping of Frozen and Chilled Foodstuffs in Reefer Containers. The presentations by international experts covered subjects related to reefer specifications, standards and temperature holding efficiency. Data was presented on the improved design of reefers and the capabilities of the on board data recorders, (Dataloggers) for temperature recording, monitoring and maintenance of transport temperatures. Reefers constructed within the past 5 years are to meet higher and more efficient requirement to comply with ISO 1496/II standards for reefer containers. Data was also presented on safety of foodstuffs when maintained at temperature above -18°C (as high as -10°C) confirming the information provided by Codex on the same issue of food safety.

Consequently, the Specialized Scientific Committee concluded that in light of the comments received from the Secretariat of the Codex Alimentarius Commission, the recommendations as put forth by the IIR could be accepted and could form the basis of a change in the health regulations without increasing the health risk for the safety of the Jordanian consumer and without detectable decline in the quality of the imported frozen meat.

Therefore, the previous policy of rejecting containers of imported frozen meat on the basis of a temperature deviation from specified temperature requirements without evidence of a health hazard confirmed by laboratory analysis is rescinded until further notice. The following revision of the Health Regulation for the Transportation of Imported Frozen Meat Of 1/1/1994 shall apply until further notice

Draft : Regulation for the Transportation of Imported Frozen Meat[5]

Interim Decision issued by the Minister of Health dated _____

Scope: Imported Frozen Meat

Definitions:

- **The Ministry**; The Ministry of Health
- The **Minister;** The Minister of Health

-Frozen Meat; Includes red and white meats which are initially cooled, then frozen at a temperature between -35°C to -40°C and stored at a temperature not exceeding the specified standard temperature of -18°C.

-Frozen Meat Temperature; The temperature at which frozen meat should be transported, stored and kept. Also, it includes the temperature at which meat should be presented for sale at the retailer, which must not exceed -18°C.

-The Committee; A committee officially formed at customs centers for taking samples of foodstuffs. It consists of a representative from the Ministry of Health, Ministry of Trade and Industries, Customs, Jordanian Institution of Standards and Metrology and any other official party of concern.

-The Sample(s); The amount or quantity taken of the product randomly and regularly, in which it represents the food product truly and enough for the agreed upon test and analysis.

-The Approval Temperature for measurement; The index temperature is considered to be the cargo temperature as recorded by cargo probes, and particularly the cargo probe located at the "worst" position in the cargo. Thermograph or temperature monitor/recorders are to be considered as the air temperature (usually return-air temperature) in the container and are to be used to determine the consistency of transport temperature control during the transport period. If the container is not equipped with cargo probes, cargo temperature is measured by the Committee, using properly calibrated equipment and validated methods consistent with instructions, and results in the measured index temperature of the cargo. The measurement is to be made at the "worst" position in the cargo

-The "worst" position is the location in the cargo most likely to represent that portion of the cargo with the highest temperature. It is located at the rear of the container, nearest to the read door. The probe is placed between the uppermost carton and the carton just under in contact with the product.

ANNEX (1)
The Registration

[5] Prepared by Anthony J. Whitehead
Consultant - AMIR-Jordan Project
March 2, 2000

First) A special file in the ministry is opened to register the frozen meat. The following information are recorded:

Name and/or type of frozen meat
Name and address of the manufacture
Address of the importer stores in the Kingdom

Second) Provide the ministry with a certified formal certificate which complies to the accredited origins from the country of origin. They should clear that the manufacturer is licensed in the country of origin to produce frozen meat and meets all the hygiene and sanitation requirements, in addition that all company products are collected in the country of origin.

Third) Submit a certificate showing that slaughter, in which all types of meats slaughtered aboard meets the international hygienic standards and provisions

Fourth) Submit health certificate with each consignment delivered as follows:

1- Certificate showing any residual of pesticides that should not exceed the international permitted limits.
2- Certificate showing the meat is free from residue of antibiotics, hormones, radiation, harmful parasites, or any pathogenic microbiological organisms or their toxins and any other contaminants not permitted by Jordanian Standards, or if permitted, such shall be within the limits established by the standards.

Fifth) Submit a certificate from country of origin, showing the method of packaging and packing of frozen meat, label, code and any other written information.

ANNEX (2)
Transportation conditions

Frozen food is to be transported in insulated containers supplied with refrigeration/freezing and cooling equipment capable of maintaining the temperature specified in the standard for frozen food transport for the entire shipment period. Transport containers having been manufactured as of 1/1/1995 should meet the standard requirements of ISO 1496/II. The containers are also subject to the following conditions

A) Must be maintained in a clean and hygienic manner, valid for frozen food transport, and complies with the general health and safety requirements contained in the Ministry of Health instructions, which were published in the official newspaper no. 3171, dated 16/3/1983 under "the conditions of transporting and storing food products".

B) The container should not be used to transport any other substances that could contaminate food or affect its quality.

C) The container must be supplied with a valid Celsius thermometer showing the container's inside air temperature easily visible from the outside while the container is closed it is closed.

D) It should be supplied with a computer or a thermograph to record temperatures from the beginning of the journey to the end of the journey - Customs Center.

E) In case of transporting frozen meat in ship stores - not in containers, temperatures must be recorded at periodic intervals from the beginning of the journey until arrival at the Custom Center. Temperatures should be recorded in the ship logbook under the supervision of the ship's head engineer. The sampling committee must review these records in the logbook before they give permission to open the cooling stores of the ship, and make sure that the temperatures during the journey to assure the temperatures complied with the specified temperature.

F) Frozen meat should be well arranged inside the reefer container, in a way that permits the cooled air to circulate freely through the center and the peripherally stored cargo.

G) Frozen food ought not be placed directly on the container floor unprotected even if packed in cartons, but should be elevated or protected or placed in a manner to prevent contamination and to allow suitable cool air circulation to maintain specified temperature of the cargo at the floor level.

If the container was manufactured within the past 5 years, the container should be equipped with air-temperature recorders used to measure air-return temperature, producing records of temperature levels at for various times during the transport period. If the container is equipped with cargo probes, the cargo probes should be place in the cargo, one in the center, approximately equal distance from side to side

and front to back of the container and the other probe placed in the "worst position". For cargo in cartons, the "worst" position shall be between the uppermost and the carton just under it in a corner at the door at the rear end of the container.

In the event of an unforeseen power stoppage of any duration, if the probes indicate a -15°C temperature or colder both immediately before and immediately after the power stoppage, the cargo temperatures can be accepted as satisfactory.

If the container manufactured date is more than 5 years old, and no cargo probes are fitted, then in the event of an unforeseen power stoppage, the cargo recorded temperatures should be accepted as satisfactory if the three following conditions listed below are fulfilled:

a.) The air-return temperature is -18°C or colder before the stoppage (excluding higher recorded temperatures during defrost periods when the fan does not run);
b.) The air-return temperature is -18°C or colder at the second hourly reading after the stoppage;
c.) The stoppage time doses not exceed 24 hours.

ANNEX (3)
Collection of Samples

The owner of the goods or his agent has to inform the all members of the sampling committee on the arrival of goods and request its clearance.

The committee examines the container and makes sure of the following:

1- All documents required by Annex (1) are presented and are in agreement with the information related to the shipment.
2- There is no evidence that the container was opened prior to this point and still bears the imprint of the tariff lead (seal).
3- The container identification plate is examined to determine the manufacturing date of the container. The date is to be recorded. If the container is 5 years old or less (using the date of 1/1/1995 as an index), the committee is to proceed using Procedure 1 listed below.
4- If the container is older than 5 years, the committee is to use Procedure 2 listed below.

PROCEDURE 1: (For containers 5 years old or less)

A) If the container is equipped with cargo probes, the committee will examine the probes for appropriate placement using the temperature recorded by the probe in the "worst" position (nearest to the door) as the index temperature of the consignment. If no cargo probes have been placed at the "worst" position, then the committee will measure the cargo temperature as indicated in Step B of this procedure.
B) If the container is not equipped with cargo probes, the Committee should establish the temperature of the cargo upon opening the container. An officially calibrated and validated thermometer or electronic temperature probe is to be placed in the "worst" position (between the uppermost carton and the carton just under it) in a corner of the cargo at the door end. The container door should be closed and assured of being properly resealed and the thermometer should remain in contact with the foodstuff for a period of no less that 10 minutes. The thermometer is to be read and recorded. This should be the first step in the inspection process.
C) Air temperature recorded thermograph records are to be examined for any irregularities, including the consistency of temperature readings between -18°C and -15°C. and no temperature variations above -12°C.
D) Air temperature thermograph records are to be examined for any indications of power stoppage for any period of time. If the highest temperature is -15°C or lower during the time immediately before the power stoppage and immediately after the power was resumed, then the transporting temperature of the consignment is considered to be acceptable. If the temperature is -15°C, or higher, either before or after, but not more than -12°C, the consignment is considered acceptable if there is no evidence of thawing or other obvious observation of damage. A representative sample should be collected for confirmation.
E) Samples are required to represent the consignment according to the procedures already described in the ministry instructions for sampling Imported Foodstuff.

F) If the consignment meets the requirements of this regulation, and temperature recordings reflect the acceptable standard temperature ranging from -18°C (up to -15°C), and with visual examination of the condition of the cargo, then samples of the consignment are not anticipated.
G) All shipments of food from import sources are subject to routine monitoring and surveillance, based on available information reflecting the compliance performance of the manufacturer, processor, shipper, shipping enterprise, or importer involved. Other considerations for sampling under the monitoring program include the nature of the food product, characteristics, potential hazards and quality defects associated with the food, and known shipping and handling conditions. Specific instructions for sampling under the routine monitoring program are provided in separate instructions.

PROCEDURE 2 (for containers 5 years of older)

A. The committee should establish the temperature of the cargo upon opening the container. An officially calibrated and validated thermometer or an electronic temperature probe is to be placed in the "worst" position (between the uppermost carton and the carton just under it) in a corner of the cargo at the door end. The container door should be closed and assured of being properly resealed and the thermometer should remain in contact with the foodstuff for a period of no less that 10 minutes. The thermometer is to be read and recorded. A cargo temperature of -12°C is acceptable. This should be the first step in the inspection process.
B. Air temperature thermograph records are to be examined for any irregularities, including the consistency of temperature readings between -18°C and -15°C. throughout the entire transport period. There should not be any temperature variations above -12°C.
C. Air temperature thermograph records are to be examined for any indications of power stoppage for any period of time. If there is evidence of a power stoppage then the following criteria are to be met:
    a) the air temperature monitor records indicate that the air-return temperature was at -18°C or colder, immediately before the power stoppage
    b) the air-return temperature is -18°C or colder at the second hourly reading after the power stoppage; and,
    c) the stoppage period of time does not exceed a total of 24 hours, and
    d) inspection of the cargo results in no evidence of thawing or any other obvious evidence of damage, and
    e) the measured temperature of the cargo is no higher that -12°C
D. If any of these conditions are not met, than the Committee should contact the Food Hygiene Directorate, Amman for consultations as to the need for collecting samples and be guided by their instructions. If samples are taken they will be taken according to the instructions provided and should be analyzed for routine microbiological contamination and for rancidity and other parameters as necessary to fit the conditions or circumstances encountered.
E. In all cases, should there be any question concerning the acceptability of the cargo, sample(s) are to be collected representing the consignment according to the

procedures already described in the ministry instructions for sampling Imported Foodstuff.

The Committee should not attempt to examine or sample any consignment when the following circumstances exist, without first consulting with the Food Hygiene Directive for instructions.

- There is evidence that the container had been opened by parties other than official agencies for official reasons, after arrival at the Custom Center, without the Committee's knowledge and or without it's written authorization after arrival in Jordan.

- If the container is not imprinted with a tariff lead (seal)

The Committee observes and records remarks of observations that call into question the possible suitability of the foodstuff for human consumption or of any essential violations and collects samples for analytical support of the suspected violations.

The Committee takes care of the orderly arranging the samples and of sending the samples to the accredited laboratories listed in Annex (5)

All members of the Committee are to sign the documents belonging to the frozen meat issue.

Reason for holding up the procedures of frozen meat tests and refusing clearance

- Not submitting the required documents as in Annex (1)
- If the presented documents do not comply with the intended requirements
- If the transport conditions shown in Annex (2) are not complete, including that:
  - The frozen meat container is not supplied with appropriate and correctly functioning refrigeration/freezer equipment to maintain the transport temperature to the specified -18°C to -15°C range.
  - The tariff lead (seal) is not shown on the container.
  - If the actual measurement of the temperature at the "worst" position is determined to be -12°C or higher.

ANNEX (4)

Basics for the initial and final acceptance of Imported Frozen Meat

Frozen Imported Meat is considered to be acceptable based on the following conditions being met.

All conditions in Annex 1 and 2 are met.

Conditions in Annex 3 for the criteria for acceptability are met.

When conditions in Annex 3 for the criteria for acceptability are not met and samples are collected for laboratory analysis, acceptability will be dependent on the analytical finding resulting from laboratory analysis of the sample(s).

When samples are collected for any other reason, the acceptability of the consignment will depend upon the analytical findings of the sample.

ANNEX (5)
SAMPLING

ANNEX (5) STANDS AS WRITTEN WITHOUT REVISION.

A Risk Based System of Food Control in Jordan

INTRODUCTION:

Imported Foods

A Customs Center Committee consisting of a representative of the Ministry of Health (MOH), Agriculture, (MOA), Customs Department (CD), Jordanian Institute of Standards and Metrology (JISM), and the Agriculture Marketing Organizations (AMO) is responsible for collecting samples of imported foods. The samples are collected according to technical regulations (instructions) issued by the ministries depending on there purpose. The Ministry of Health collects samples according to the instructions issued for this purpose. Likewise, JISM collects samples according to instructions issued by the central office. Samples are collected in the presence of the owner or their agent. Samples collected by MOH are analyzed by MOH laboratories located in Amman, Aqaba and Irbed, depending on the point of entry in Jordan and the type of analysis to be performed. JISM samples are analyzed by the JISM Headquarters Laboratory Unit in Amman, or one of the JISM accredited laboratories, which are also located in Amman. Food samples analyzed for chemical contaminants are the responsibility of the MOH, however, the MOA laboratory in Amman actually performs pesticide analyses, because MOH laboratories do not have this capability.

For food safety, each sample is subjected to four or more different analytical tests. The tests usually include microbiological hazards, chemical and toxin contamination, compliance with hygienic standards, physical and quality defects, and labeling compliance, among others. When it is determined, that samples are needed for purposes other than for food safety, such as food quality and compliance with Jordanian Food Standards requirements, then separate samples are collected. Approximately 80 % of all food products enter Jordan through the port of Aqaba. The remainder enters through cargo processing at Queen Alia International Airport, Amman, and to a minor extent at crossing points with Saudi Arabia, Israel, Syria, and the Palestinian Authority Territory. Frozen products are almost exclusively entered at Aqaba in containers equipped with freezer units and temperature recording equipment that records the temperature of the return air to the freezing unit on a hourly bases from the time of shipment. Chilled foods, particularly fresh chilled meat, cheese and other dairy products usually enter Jordan at the Amman International Airport.

The present policy of MOH is to collect physical samples from each imported food consignment (100% sampling programme). Each sample is randomly collected and units are collected from each production day, each batch within the production day and for each brand or species of animal, if it is a meat product, represented in the cargo. The size and number of samples from a single consignment can be considerable. For example, in a consignment of frozen meat in five-kilogram packages from three production days, with three production codes within each production day and representing buffalo, beef, and lamb, can result in 18 samples. Each sample would weigh 30 kilograms (6 – 5 kilo packages per sample). The total weight for all samples would amount to 540 kilograms. The actual amount of meat needed for laboratory analysis for bacterial contamination for each sample is about

500 grams or a total of 9 kilograms for all 18 samples. Therefore, approximately 530 kilograms of the food sampled from the consignment is wasted.

Domestically Produced Foods

Food produced by the domestic food industry within Jordan is generally produced from fresh agricultural primary products. These include fruits and vegetables within season or freshly slaughtered animal and poultry meat. The food is packed in various container types and states, i.e., canned, glass jars, pouched or plastic wrapped, frozen, chilled, dried, ground, etc. Many foods are produced from raw materials received as imported sources.

Before food establishments can operate, they must first be licensed. Inspection of the facilities for compliance with licensing requirements, including hygienic requirements, is carried out by public health inspectors of the Governerate/District level under the direction of the Medical Health Doctor.

ANALYSIS OF CURRENT LEVEL OF RISK FROM IMPORTED FOODS

This Consultant made a limited and simplified risk assessment of the level of risk to the public from imported foods based on available information. This review was made to determine if there was sufficient evidence to support the necessity of 100% inspection (sampling) of imported foods to protect consumers in Jordan. A comprehensive risk assessment may provide additional information, however it was considered for the purpose of this review that a comprehensive review was not necessary, based on the results of the simplified assessment. The simplified assessment also provided information sufficient to support preliminary conclusions to warrant considerations of alternatives to the present level of monitoring for imported foods. Further, some tentative conclusions can be drawn about the relative safety level of imported foods when compared to domestically produced foods.

For this, the data from the annual reports produced by MOH related to food control activities for the years 1997, 1998, and 1999 were reviewed. These reports provide statistical information as to the number of samples collected, analyzed, the results of analysis and the failure rates for food from all sources (imported and domestically produced). The Consultant has extracted relevant information from these reports for summary purposes; however, it is recommended that the reports be reviewed in full for a more comprehensive understanding of the data.

CONSIDERATIONS BASED ON THE DATA

Before any conclusions can be discussed related to this risk assessment, a basic understanding is needed to place the conclusions in to their proper context. Related to the context of world trade and today's trading environment:

- Technical measures may be taken in order to protect human, plant and animal life and health under the Sanitary and Phytosanitary Measures Agreement of the WTO.

- Internationally established standards are to be used whenever possible unless there is a need for a higher level of protection than provided by the international standards.

- Measures are to be based on sound science, which supports the measures and based on an assessment that the measures are necessary.

- Measures must be justified, cannot be discriminatory or arbitrary and cannot constitute a disguised restriction on international trade.

- Requirements and standards are to be published, including the anticipated time it will take to perform any inspection, examination and analytical testing of products offered for entry into Jordan.

- Imported food products are to be treated the same as domestically produced food products.

- Import entry procedures are to be simplified, streamlined and non-trade restrictive.

A summary of the data is attached as Table 1 and provides sufficient information to preliminarily justify the implementation of a **RISK BASED SYSTEM** for food monitoring. It also suggests that domestic food products represent a greater risk to some hazards to the public than imported food. The assessment reveals the following considerations.

- The SPS Agreement of the WTO prohibits discriminatory practices and requires that imported food products be given the same treatment as that given to domestic production. It is obvious from the data that the 100% inspection and sampling/testing policy for imported food does not apply to nationally produced food production. The data reflects that nearly 70% of the total samples analyzed for food safety monitoring are from imported sources. The rejection rate for imported products ranges from 0.6 to 0.9 percent while domestic food products are three times higher for one half the number of samples. Consequently, Jordan may be in an indefensible situation in a case that challenges the present 100% import-sampling programme as a discriminatory trade practice.

- Domestically produced food products are not monitored at the 100% level as are imported food products even though the data indicates that the incidences of failure for domestic products is three time higher than imported food products. Domestic food products are actually tested and analyzed at one-third the level of imported products. If the data was purged for samples that failed for other than food safety reasons, the food safety percentage for imported food drops to ¼ percent. On the other hand, the domestic food failures for the equivalent number of samples analyzed for imported foods would extrapolate to a failure rate of 6 %, or about 24 times as many failures than for imported foods. Therefore, it appears more attention is needed to domestic produced products and less to imported products.

- The level of sampling appears to be considerably higher than is warranted by the results of laboratory analyses. For the past three years, Jordan averaged 75,211 samples per year, of which most were subjected to about four different tests each. This amounts to 300,844 tests per year. It is estimated that the average cost per test is 25 Jordanian Diners (approx. $35.00) or nearly 11 million JDs/year. The consultant is informed that the cost per test is considerably lower in Jordan due to the absences of expensive instrumentation involved in the analytical testing. Therefore, using an estimate of 10 JDs/test the annual cost of testing is about 3 million JDs/year. These estimates do not consider the cost of personnel time and support, facilities, overhead, the sampling process.

- Considering that, of the 70,000 samples collected each year, about 69,000 samples were found to comply with Jordanian standards of quality and safety. A quick review of these samples would indicate that sampling was most likely to be unnecessary if risk based criteria were used in the sampling decisions. Significant resources could be saved and could be devoted to those risk situations requiring more attention. The rate of sampling can be significantly reduced without a corresponding loss in the level of protection, by applying risk-based criteria to the sample and inspection processes. In fact, using risk-based criteria for sampling decisions increases the level of protection for consumers since high-risk products will be the primary targets of the sampling programmes. This is a more effective and efficient utilization of resources.

- The data also reflects a number of import rejections based on temperature and shipping or storage conditions. This data applies primarily to imported frozen and refrigerated/chilled meat and meat products. All arriving consignments are subject to confirmation of the appropriate shipping temperatures required by Jordan standards and a measurement of the temperature is made manually upon the arrival of the consignment. The policy of the MOH has been to reject all shipments, which do not meet these requirements without sampling or examining the product. This decision is made without consideration of the thermograph recordings, which may indicate the temperature was at satisfactory levels for the entire journey (in some cases up to 20-30 days). It has also been the policy of MOH to not allow appeal of the decisions.

  This policy is based on an international standard that has been mistakenly applied and was never intended to serve as a sole criterion for judging the acceptability or rejection of a frozen food consignment. WTO Agreements require that rejection of products in trade be based on scientifically supportable evidence of a product's unacceptability such as the evidence produced from a laboratory analysis of a properly drawn representative sample. The recording of a single temperature reading at the time of arrival does not provide any more evidence than a simple visual observation that the product is or is not frozen. Thermograph records, which indicate the temperature at hourly intervals throughout the entire shipment period, are most likely to be more informative in this regard than a single temperature measurement at the time of arrival.

  The safety and quality of frozen food is both **temperature and time** related. Temperature levels of frozen foods must be shown to be at a higher level than the

standard for a significant period to cause concern for the quality and safety of the product. For example, storage at -12 degrees C (rather than the standard of –18 degrees C) for 21 days may cause meat to lose one month of its expected shelf life of about 18 months with no effect on the safety.

RISK BASED SYSTEM

Modern approaches to food control as it applies to assuring food safety requires providing the appropriate level of protection against known and potential food hazards. A risk based food control system allocates the maximum available amount of resources (personnel and financial) to high priority activities, which have as an objective the elimination or reduction of targeted consumer risks associated with food. To implement this approach, an assessment of the risks is made. This includes the identification and characterization of the hazards and estimating the human exposure to these hazards to further characterize the risk. Those risk characterized as having the greatest impact and severity on consumer health are identified as the high priority targets and available resources are allocated to implement appropriate measures to control and manage these risks to acceptable levels.

Data and information is needed to implement a risk-based food control system. However, it need not be a complicated process. A great deal can be accomplished quickly by relying on available known information. Utilizing already known and available basic knowledge related to the known hazards in the food supply can make the process simple. Sources of valuable information can be obtained from local technical universities, academics, local food technology experts for industries, scientific literature from medical libraries, international organizations (FAO, WHO) and national organizations from their Internet pages. Simple solutions are often the best solutions. A comprehensive body of scientific information is available related to most known hazards associated with various foods. Risk assessments of most food contaminants and additives have already been done by internationally recognized scientific assessment bodies for most food ingredients and can be relied upon for this purpose.

Hazards are classified into three different categories. The first are **physical** hazards. These hazards are usually physical objects in food. They include stones, pits, shells, grit, and production debris such as glass, pieces of metal, and other physical substances that can cause injury. Although many physical hazards can cause injury during ingestion, most of them are not life threatening. Some may be large enough however to become lodged in the airway of the victim, where immediate attention is required.

The second category covers **Chemical** hazards. These hazards usually are associated with agricultural practices (pesticide residues), industrial and environmental pollution contaminants, chemical food additives, toxic substances from biological sources (mold, bacteria, toxic plant materials,) production failures, accidental contamination and storage and handling practice failures. Toxic substances can occur in foods at levels that can cause acute reactions upon ingestion. Consequently, the risk can be severe. The risks associated with low level and long-term exposure to chemical

contamination is more complex and may require epidemiological data, dose response information, short and long term toxicological studies, and intake/exposure data. A considerable amount of sound scientific data is already available for common and major contaminants of food and is considered reliable for this purpose. The potential for this type of risk from the food supply should be rather limited for Jordanians since Jordan is not highly industrialized. There may be a higher risk due to automobile emissions and personal smoking habits than from food.

A great deal of information has been published on most food contaminants and approved food additives. The Codex Alimentarius Commission has international standards on all approved food additives. It has established maximum tolerance levels for more than 25 groups of chemical contaminants including heavy metals and organic chemicals (dioxins, polychlorinated biphenyls) based on risk assessments provided by the Joint FAO/WHO Expert Committee on Food Additives (JECFA). Codex also has established tolerance levels for more that 3000 different pesticides/commodity combinations for the nearly 200 different approved pesticides for use in pest control on food crops.

JECFA has also completed safety evaluations on more than 60 different veterinary drugs and growth promoting hormones used in food producing animals. Some new technologies have been studied and approved by the WHO, FAO and Codex for food safety, including food irradiation, some forms of biotechnology, and innovative packaging methods including modified atmosphere packaging. The results of these studies and assessments have been published and are available for general use by national governments, institutions and the private sector. Suggested references include JECFA Reports, the Codex Alimentarius Commission and its subsidiary bodies, the European Union Committee on Food Safety, the U.S. Food and Drug Administration, the U.S. Environmental Protection Agency, U.S. National Academy of Science and National Research Council, and a host of private sector institutions.

The third category covers **Biological** hazards. These hazards are biological agents including pathogenic bacteria, viruses, mold, and parasites, among others. Many are ubiquitous in nature and some can cause severe health consequences, even death. Many food hazards are well known and information is readily available on the agents involved. The dose response for biological agents are not always clear and is subject to immune response by the victim, the virulence of the biological agent at the time of infection and other factors. Presently, there are no established microbiological criteria for use in international trade. Consequently, any limits established for microbiological contaminants in food as criteria for acceptability will require scientific support through a risk assessment process that is internationally acceptable.

At present, the International Commission on Microbiological Specification for Food (ICMSF), a highly recognized expert committee in the field of microbiological science, is developing the means by which microbiological criteria may be developed. They have worked for a number of years on risk assessment procedures and methods and have proposed schemes for developing criteria that have been referred to the international scientific community for consideration. The Codex Committee on Food Hygiene is also involved in these efforts.

The development of microbiological criteria may not be totally possible, or if so, may have to be based on "soft" science because of the unique nature of the involved organism, and absence of any reliable studies for support. Consequently, food control officials are relying on alternative preventative measures to overcome this control gap. Intense quality assurance programmes have been developed and are being applied to assure food safety at the production level. The primary programme being employed is the Hazard Analysis and Critical Control Point (HACCP) system for food safety. This system was developed as a Zero Defect System of the United States Space Program in conjunction with the Pillsbury Company and the US Military, to protect astronauts from unsafe food during space flight. The system incorporates a biological kill step in the food production process, which when controlled with time and temperature controls, properly monitored for continuous acceptable performance, and corrective action taken when appropriate to prevent failure, results in a safe product. An effective HACCP system is a requirement for the importation of some high-risk food products such as fish into some countries with additional high-risk foods being considered for future applications of HACCP.

It has long been known that sampling methods are generally inadequate to appropriately identify unacceptable products. For most food sampling programmes, the sample quantity is insufficient to provide a suitable level of probability that prevents unacceptable products from being accepted. When the incidence of defects is very low, the number of units to be collected per sample must be increased significantly to assure a probability to prevent accepting lots which are unacceptable. Consequently, control measures that are dependent on sampling programmes such as sampling imported products are ineffective as a mean of controlling risk.

To overcome this ineffectiveness, food control officials worldwide must become partners in their efforts to improve food safety. To start with, food control officials of trading partners should look for ways to become partners in food safety from exporting to importing. Actions needed include:

- Establishing a system of information exchange with food import/export control official of the major trading countries;

- Publishing informational brochures and pamphlets that provide descriptions of the procedures, requirements and contacts necessary to successfully import products into the country;

- Accepting certification from official food control officials of trading countries as a means to clear imported food products, based on exporting country assurance of quality and safety of production practices of suppliers and manufactures; (this of course involves periodic checks to affirm certificate validity)

- Adopting harmonized requirements and standards between trading partners based on international standards to reduce the confusion of meeting import standards;

- Holding joint meetings and discussions relevant to import procedures, requirements, problems and rejection/detentions;

- Establishing emergency contacts and communication procedures for situations that require urgent contacts that relate to imported food;

- Establishing routine communications related to rejected products for the mutual benefits of enhancing food safety in both importing and exporting country;

- Sponsoring joint training and education programs; and,

- Seek and encourage negotiations with trading partner countries for equivalence and mutual recognition agreements.

By implementing activities of this nature, confidence is built among control officials in the trading countries. Regular communications to exchange important information such as the controls exercised over industries within the exporting countries and the laboratory finding of importing countries after examining incoming import food products, is important information for both countries. Information related to reasons for product rejection, products being rejected, including manufacturers, suppliers, and shippers involved, could assist exporting countries in managing food safety of exported foods. Most important is the direct verification of important information that may be called into question by the importing country at the time of importation to prevent needless controversy.

APPLICATION OF A RISK BASED SYSTEM FOR IMPORTED FOOD PRODUCTS IN JORDAN

Review of the data available from the analysis of food products imported into Jordan can provide useful information in deciding future monitoring needs. From the data referred to earlier in this document, it is clear that imported products are not a major source of food-borne risk. Total rejected products from imported sources are less than 1% of the total number of 40,000 plus consignments/year. When this data is purged of the number of products rejected for non-safety problems, the rejection rate is about 0.25 %. At this level of defect, there is no scientific support or justification for a 100% sampling program for imported foods. Over the past three years, various groups of products have been identified as those products that present the higher level of probability to be unsuitable for acceptance. These include frozen and chilled meats, (including poultry) and frozen fish. The data show that these products have an equal chance to be rejected for unacceptable shipping temperatures at the time of arrival without any examination, sampling or laboratory determination that the products are unsafe or unsuitable for human consumption. Approximately 45-50% of all rejected frozen meat and fish products are rejected solely based on manual temperature determination made at the time of arrival. This is most likely to be considered a discriminatory trade practice, since domestic meat products are not treated in the same manner.

Other foods include dairy products, dates, coffee, confectionery and candy products, and miscellaneous food products. The volumes of these products are less and the rejections are primarily due to violation of various specifications and standards. When considered as a factor for risk to the total population of Jordan, the risk level would be

essentially zero. Consequently, they are not an influencing factor in food safety risks from imported food sources for Jordanians.

IMPLEMENTATION OF A RISK BASED SYSTEM

The following is a description of how a risk based system can be implemented as an alternative to the present 100% inspection and sampling/testing programme currently in use for imported food product control in Jordan.

This programme is intended for the control of imported food for food safety considerations. A separate programme would be needed for routine surveillance and monitoring of such aspects as food labeling requirements, quality requirements as established by food quality standards, and other non-safety considerations.

The **Risk-Based** programme described here is based on a three-tier level of safety. The first level is **NO RISK/LOW RISK** Food. Such food does not ordinarily present a food safety risk under usual conditions of preparation, handling and distribution. The food may also be one that is processed or receives technical treatment that renders it to a no or low risk category. Examples of such foods would be products that are hermetically sealed in cans or jars and have a high acid content, or dry cereal grains such as wheat, oats, corn, rice etc and the flour from these grains.

Food control activity would include sampling any time the product is suspected of contamination with a hazardous material or agent, or there is evidence of contamination of a hazardous material or agent. Otherwise, the product is subject only to routine clearance procedures of assuring entry documentation is complete and physical examination of the cargo to determine if any shipping damage has occurred that might be a source of a hazardous contamination of the product.

The second category is food with a **MODERATE RISK** level. These foods may be cereal products, which have been fortified with vitamins and minerals, frozen processed foods such as pizza and combination dinners, or meal expander products such as packaged dried soup mixes. These products would be subject to a specific protocol for sampling under a programme intended to prevent specific hazards and eliminate the associated risk from the food supply. Sampling frequency may range between 10-20 percent of all shipments in this category. The protocol for sampling would include sampling new food products the first time it is imported, from a given country or producer. Frequency of sampling can be gradually reduced to minimal levels when confidence is established based on analytical results, exchanges of information with external sources and through other external activities.

The third category would be foods with a **HIGH RISK** level. This would include foods such as meat, fish, eggs, milk and dairy products, including some cheese or products that contain these commodities as ingredients. It may also include certain foods that are usually consumed raw or are processed foods that are consumed without cooking.

High risk foods are subject to a higher level of surveillance under an imported food safety programme. The sampling protocol of the food safety programme would

normally expect to sample high-risk foods at a rate of 50 – 75 percent of the number of cargo entries received in this category annually. Again, as confidence is gained in certain products or certain producers or from certain countries, the level of surveillance can be reduced.

In all cases, imported foods should be subject to a general imported food surveillance and monitoring programme. Such a programme is intended to maintain control of imported food through a general sampling on random bases for quality and safety of the food products. If a food product were targeted for routine sampling and laboratory testing under an imported food safety programme, there would be no reason to collect additional samples for analysis under the import food-monitoring programme.

A risk based food control system for imported products would necessarily also involve some needed external activities to enhance the programme. This might include some of the following.

- Seeking avenues of communication with food control officials controlling exported food shipments to Jordan;
- Harmonizing food safety requirements and standards with exporting country food control officials and industries. This prevents different standards and procedures being used by trading partners, which results in confusion in the trading process.
- Exchanging information related to defective and rejected consignments. Subsequent consignments can therefore be corrected at the country of origin rather then being subjected to rejection and re-exportation.
- Simplifying import control operations to reduce barriers and eliminate unnecessary policies between trading partners.
- Publishing pamphlets that provide procedures, requirements and information to interested parties information on how to import food products into Jordan.
- Seeking equivalence and mutual recognition agreements with trading partner countries;

Some internal activities would also enhance the risk based import food control system. Some suggestions for internal activities include:

- Maintain a close but formal working relationship with Jordanian shipping and importing associations to keep them advised of changes to import programme procedures, and requirements to receive input on potential problem areas.

- Maintain information services with consumer and professional groups to keep them advised of the programme's activities and progress and to receive input on potential problem areas.

- Utilize professionals and experts in food science to assess the common foods imported into Jordan to determine the categories in which they fall. The assessment should take into consideration the intended use of the product, the manner in which it is handled and consumed and the potential hazards that may be present based on available information from the country of origin and other sources.

Tier One – NO RISK to LOW RISK Products

Products that are offered for entry into Jordan in Tier One would be subjected to the following suggested clearance steps.

STEP 1: This step includes the assurance that all required import paper work and certificates are available, correctly filed and provides the necessary information to satisfy entry requirements. Any deficiencies in the records will be addressed immediately with the importer or his agent for correction. Import clearing procedures are to continue if record discrepancies are being corrected.

STEP 2: If all import documents are correct and present as required, the clearance process can move immediately to Step 2. The clearing process should not be interrupted while required import documents are being corrected, if they were incorrectly filled out or if any required documents were absent and are being obtained to comply with entry requirements. Step 2 includes the examination of the cargo for verification it is the product identified in the entry documents and any other activity that is accomplished by examination and physical inspection without a sampling activity. For example, this step includes the inspection of the cargo for damage or contamination resulting from shipment. It would also include an examination of the labeling for compliance with labeling requirements.

If the product is not targeted for sampling under the random Imported Food Monitoring Programme (the general imported food surveillance and monitoring programme), it can be released for entry. If the cargo contains a product that is targeted for the random monitoring sampling programme then samples can be collected at this time. If there is no other reason to collect samples for food safety considerations, the cargo can be released without further inspection or sampling.

Tier two - MODERATE RISK FOODS

Food control of imported food products that fall within the Moderate Risk category is subject to the above-described STEP 1 and STEP 2 activity. If the product or products in the cargo are targeted for sampling under the Imported Food Safety Programme, physical samples are collected in STEP 3. Physical samples of the product or products in the cargo are collected for laboratory analysis for the identified food safety reasons. Sample analysis involves the testing and detection of the hazards associated or anticipated in the product. The product can then be released based on a satisfactory

laboratory result, and can be rejected or held over for reconditioning (if possible), should the laboratory results be unsatisfactory.

Those products which are not sampled and without suspicion, or are not targeted for sampling under the Imported Food Safety Programme or the Imported Food Monitoring Programme, can be released without further examination or sampling.

Tier 3 - HIGH RISK FOOD

High risk foods are subject to STEP 1 and 2. Most will be subject to STEP 3, collection of a physical sample. The difference between the moderate and high risk foods is that the frequency of inspection and sampling for high risk foods is higher. High risk foods will be sampled at a level of 50-75% of the total annual shipments. Moderate risk foods will be sampled at a level of 10 – 20 % of the annual shipments.

For “no risk to low risk”, the policy of the food control organization is that these products are monitored at a minimal level. This would include sampling of those consignments found to be suspicious based on the inspection findings (STEP 2). Otherwise, these products are routinely accepted without further consideration based on acceptable documentation (exporters certificates from relevant control officials of the exporting country) and past performance of exporter, shipper and importer. No risk to Low Risk food products should be occasionally examined, inspected, and sampled on limited occasions as part of the general import food product-monitoring programme. Monitoring rate of the general import food programme is anticipated to be between 5-10 percent of the total consignments of all imported food and about 1-5 % for food safety reasons in this category.

For “moderate” risk products, general monitoring rate is anticipated to be between 5 - 10 percent of the number of the total number of consignments, and at a rate of 10-20% of all imported food in this category. Should failures be found for any one product or for products from a particular country, monitoring activities can be accelerated temporarily to higher levels of coverage. Consistent satisfactory compliance performance can justify a reduction in coverage as well.

For “high risk” products, sampling from 50-75 % of the total annual consignment in this category for food safety purposes and 5-10 % of the total consignments for general imported food control purposes is suggested. If warranted by historical data, industry compliance performance information, shipper and country information and the results of any external relationships with the food control officials of the exporting country, the level of surveillance can be increased or decreased accordingly. Certification of effective use of HACCP system by competent food control authorities in the exporting country can reduce the level of coverage considerably. A higher level of monitoring may be used for new products that have no established performance record, or for high-risk products that have historically the highest rejection rate and require a high level of monitoring.

RECOMMENDATION

Jordan should consider the implementation of a risk-based system for food safety monitoring of imported food products. AMIR should consider providing the necessary assistance in establishing a framework and strategy for this transition.

Food control officials should conduct a comprehensive review of the past records of rejected imported foods to assist in the development of a risk-based Imported Food Monitoring Programme and an Imported Food Safety Programme.

Food control officials should recognize the ineffectiveness of using food-sampling measures as the primary means of assuring food safety and are encouraged to seek alternative means of control.

Sampling of each lot and each production day is no more effective than collecting a truly random sample of sufficient quantity to represent like products in the entire consignment. Consequently, the number of samples per consignment can be reduced to one sample for like products in the consignment without sacrificing the effectiveness of the sampling.

Sampling for bulk packages (large size blocks or containers) or cases should be done under appropriate conditions that will reflect the condition of the product to prevent contamination during the sampling process.

> Samples should be collected only under controlled conditions. For container shipments, they should either be “stripped” (emptied so that the entire shipment can be examined and the sample collected with access to the entire lot). The port authority should provide a container-stripping center for this purpose or this activity should take place at the importers premises, provided it is suitable for such purpose.
>
> For frozen products, sampling should consist of a portion of the package if in bulk containers or large size packages (2.5 Kilograms or above) or intact packages if under 2.5 Kg. If portions are drawn, they should be done aseptically and in appropriate facilities that prevent environmental contamination.

The use of a Custom Center Committee for sampling imported food products, consisting of representatives of several control agencies is redundant and is an inefficient use of staff for a relatively simple process. The functions are purely mechanical in nature and consist of the physical activity of collecting the sample. Considering that the import programme may be shifted to a risk based system, the number of samples will be dramatically reduced, lessening the demand for this level of staffing. In addition, the risk-based system will require significant decision making responsibilities based on technical knowledge and education in food sciences. At present, the committee members are certified for two-year education beyond high school, with little education in food science.

The level of communications both internally within MOH and outside to international sources, and the collection of food control data for tracking and trend analysis of imported food compliance data, require computerized systems for this purpose. At

present, the paper system for import control is complex, time consuming and difficult to manage in terms of data collection and trend analysis necessary for decision making for future management of imported foods. MOH should be provided the necessary computer capacity and capability for this purpose and to eventually link into the Custom Department computerized system for import document control to eventually eliminate the need for a paper system altogether.

Computer capability should be provided immediately to the Food Hygiene Division with Internet capability. This capability will allow for internet communications with international and national organizations related to food safety in trade requirements, scientific data and information to support food safety reforms needed in current procedures and requirements for import foods and to communicate with foreign food control officials related to harmonization of food safety requirements.

TABLE 1: Summary of Food Samples and Laboratory Analysis
Imported Vs Domestic
1997, 1998, & 1999

	1997 Number of Samples	% of Total	1998 Number of Samples	% of Total	1999 Number of Samples	% of Total
Total samples	70,818	100%	77,011	100%	77,804	100%
Imported	46,320	65%	47,733	65%	53,954	69%
Domestic	24,498	35%	27,278	35%	23,850	31%
Failed	1,065	100%	1,020	100%	1,208	100%
Imported	294	0.63%	293	0.59%	486	0.90%
Domestic	771	3.15%	727	2.66%	722	3.0%
Total No of Tests	291,541	100%	302,735	100%	341,387	100%
Imported	198,444	68%	230,197	76%	263,608	77%
Domestic	93,097	32%	72,542	24%	77,779	23%
No. of samples per analysis type						
Microbiological	32,857	100%	34,841	100%	34,847	100%
Imported	20,082	61%	21,110	61%	21,834	63%
Domestic	12,775	39%	13,731	39%	13,013	37%
Chemical	30,397	100%	33,440	100%	33,277	100%
Imported	18,809	62%	19,974	60%	22,522	68%
Domestic	11,588	38%	13,466	40%	10,755	32%
Aflatoxin	7,564	100%	8,730	100%	9,680	100%
Imported	7,429	98%	8,649	99%	9,598	99%
Domestic	135	2%	81	1%	82	1%
Total Rejection	174	100%	204	100%	209	100%

Unfit for Food	116	67%	75	37%	102	49%
Hygiene/Standard	17	10%	61	30%	45	22%
Transport/Storage	35	20%	62	30%	57	27%
Origin	6	3%	6	3%	5	2%
% of total samples						
Unfit for food		0.25%		0.15%		0.19%
Hygiene/Standard		0.04%		0.12%		0.08%
Imported Food Destroyed	174 Tons		292 Tons		464 Tons	

The Concept of Selective Sampling of Imported and Domestically Produced Food Products

INTRODUCTION:

The present policy of the Ministry of Health, Jordan is to collect physical samples from all imported food consignments, with a sample representing each production day and each batch within the production day. In the case of meat products, if more than one species is represented in the consignment the samples are collected for each species represented as well. If the consignment represents food products that require special handling, such as refrigeration, or to be maintained in a frozen state, the sample is to consist of intact packages regardless of the size of the package. The number of units to be collected for each sample is prescribed in the health regulations for sampling and is dependent on the number on units in the portion of the consignment being sampled. For example, a consignment of imported frozen meat from beef and lamb, containing three production dates, and three batches within each production day for each species will result in 18 samples from the consignment. The number of units to be collected for a batch of between 101 and 200 units is six units collected at random. If the product is packed in big size cases or cartons with units weighing 5 kilograms (11 lb.) each, the total sample consists of 6 units weighing a total of 30 kilograms. Eighteen samples of 30 kilograms each or a total of 540 kilograms (1,188 lb.) would be collected from the consignment. Approximate 500 grams (1.1.lb) is required for analysis for microbiological testing for each sample or 9 kilograms.

A Customs Center Committee consisting of a representative of the Ministry of Health (MOH), Customs Department (CD), Ministry of Agriculture (MOA), Jordanian Institute of Standards and Metrology (JISM), and the Agriculture Marketing Organizations (AMO) is responsible for collecting food samples. The samples collected are done according to technical regulations (instructions) issued by the ministries depending on the purpose. The Ministry of Health issues instructions for all samples required for food safety determination. Likewise, samples collected for compliance with Jordanian food standards are collected according to instructions issued by JISM, etc; Samples are collected in the presence of the owner or their agent. Laboratory analyses for fitness for human consumption are conducted by the Amman and Aqaba laboratories of the Ministry of Health, depending on the point of entry in Jordan. JISM samples are analyzed by the JISM Standards Control Unit Laboratory in Amman. Food samples analyzed for chemical contaminants (primary pesticide, hormone, and other residue) are also tested by the MOA laboratory in Amman. Each sample may be subjected to four or more different test on the average. The tests include microbiological hazards, chemical and toxin contamination, compliance with standards, physical and quality defects, and labeling compliance, among others. When it is determined that samples are needed for different purposes, separate samples may be collected from the same lot, production day and/or species (in the case of meat from different types of animals) for the specific purposes intended. At the very least, additional amounts of the product maybe collected, which increases the overall quantity of product removed from the consignment for sample purposes.

Entry of food products into Jordan are primary through the port of Aqaba, representing nearly 80 plus percent of all imported food. The remainder is imported through cargo processing at Queen `Alia International Airport, Amman, and to a minor extent at crossing points with Saudi Arabia, Israel, Syria, and the National Palestinian Authority Territory. Frozen products are almost exclusively entered at Aqaba in containers equipped with freezer units and recording equipment which records the temperature of the return air to the freezing unit on a hourly bases from the time of shipment. Chilled foods, particularly fresh chilled meat, cheese and other dairy products enter at the Amman International Airport. The Ministry of Health operates laboratories in Amman, Aqaba and Irbid with 65-70% of the imported food samples analyzed by the Amman laboratory, 30-35% analyzed by the Aqaba laboratory and 1-2% analyzed by the Irbid laboratory.

ANALYSIS OF CURRENT LEVEL OF RISK FROM IMPORTED FOODS

It is not possible to assess the level of risk to the public from imported foods on the bases of the limited amount of information available to this consultant. However, a review of some of the statistical information comparing the results of laboratory analysis of samples of imported foods and domestically produced foods can lead to some general conclusions as to the potential risks from both sources. A comprehensive risk assessment would necessarily involve epidemiological data, dietary intake and exposures data, a characterization of the hazards as to severity of health consequence, etc., to be more accurate. The review was made to determine if sufficient evidence exists to support the 100% inspection of imported foods (laboratory analysis of samples by lot, production day, and species, if meat products) as necessary to achieve consumer protection in Jordan.

For this, the annual reports produced by the MOH as the achievement levels for food control for the years 1997, 1998, and 1999 were reviewed. These reports provide statistical information as to the number of samples collected, analyzed, the results of analysis and the failure rates for food from all sources (imported and domestically produced). The Consultant has extracted relevant information from these reports for summary purposes; however, it is recommended that the full reports be reviewed for a more comprehensive understanding of the data.

The below chart provides information from these reports, which provided sufficient information for implementing a risk-based system for more efficient and effective resource use in consumer protection. It also points to directions in which these resources are needed in order to apply better measures to reduce risk from food for the public. Much more information is needed for a more informative and detailed assessment, however for the purpose of this study the information provided is sufficient.

Summary of Food Samples and Laboratory Analysis
Imported Vs Domestic
1997, 1998, & 1999

	1997 Number of Samples	% of Total	1998 Number of Samples	% of Total	1999 Number of Samples	% of Total
Total samples	70,818	100%	77,011	100%	77,804	100%
Imported	46,320	65%	47,733	65%	53,954	69%
Domestic	24,498	35%	27,278	35%	23,850	31%
Failed	1,065	100%	1,020	100%	1,208	100%
Imported	294	0.63%	293	0.59%	486	0.90%
Domestic	771	3.15%	727	2.66%	722	3.0%
Total No of Tests	291,541	100%	302,735	100%	341,387	100%
Imported	198,444	68%	230,197	76%	263,608	77%
Domestic	93,097	32%	72,542	24%	77,779	23%
No. of samples per analysis type						
Microbiological	32,857	100%	34,841	100%	34,847	100%
Imported	20,082	61%	21,110	61%	21,834	63%
Domestic	12,775	39%	13,731	39%	13,013	37%
Chemical	30,397	100%	33,440	100%	33,277	100%
Imported	18,809	62%	19,974	60%	22,522	68%
Domestic	11,588	38%	13,466	40%	10,755	32%
Aflatoxin	7,564	100%	8,730	100%	9,680	100%
Imported	7,429	98%	8,649	99%	9,598	99%
Domestic	135	2%	81	1%	82	1%
Total Rejection	174	100%	204	100%	209	100%
Unfit for Food	116	67%	75	37%	102	49%
Hygiene/Standard	17	10%	61	30%	45	22%
Transport/Storage	35	20%	62	30%	57	27%
Origin	6	3%	6	3%	5	2%
% of total samples						
Unfit for food		0.25%		0.15%		0.19%
Hygiene/Standard		0.04%		0.12%		0.08%
Imported Food Destroyed	174 Tons		292 Tons		464 Tons	

CONSIDERATIONS BASED ON THE DATA

Some immediate considerations are obvious from this data.

1. The SPS Agreement of the WTO prohibits discriminatory practices and requires that imported food products be given the same treatment as that given to domestic

production. It is obvious from the data that the 100% inspection policy for imported food does not apply to nationally produced food production. The data reflects that on average 65-70% of the samples subjected to inspection are from imported sources while only 30 % are from domestic production. Consequently, Jordan may be in an indefensible situation should a member country of the WTO challenge on the bases of discriminatory trade practices.

2. Imported food products are tested at the 100% level when the data indicates that the incidence of failure is much higher for domestically produced products. Imported food product failures ranges from ½% to 1% of the total number of samples and account for 20-25% of all the failed samples. If the data was purged for samples which do not reflect health or safety issues, it is less. On the other hand, the domestic food failures average about 3% of the total number of samples analyzed and account for 70% or the total number of failed samples per year. It appears more attention is needed to domestic produced products and less to imported products.
3. The level of sampling appears to be considerably higher than is warranted by the results of laboratory analysis. For the past three years, Jordan averaged 75,211 samples per year, of which most were subjected to four different tests each, for 300,844 tests per year. The average cost per test in estimated to be 45-50 Jordanian diners (approx. $65.00). The consultant is informed that the cost is considerably lower in Jordan due to the absences of expensive instrumentation involved in the analytical tests. Therefore, using an estimate of 10 JDs/test the annual cost of testing is about 3 million JDs/year. If the estimate of 10 JD is underestimated as is suspected to be the case by this Consultant, then the estimated cost could range from 13 to 15 million JDs. The rate of sampling can be significantly reduced statistically without a corresponding loss in the level of protection by applying specific criteria and a risk based purpose to the sample and inspection processes. This can result in significant savings realized in the cost of analysis and a reduction of time and effort by employees.
4. The data also reflects a number of import rejections based on temperature and stroage conditions. This data applies primarily to imported frozen and chilled meat products. Consignments are subject to confirmation of the appropriate shipping temperatures required by Jordan and measured upon the arrival of the consignment. The policy of the MOH has been to reject all shipments, which do not meet these requirements without sampling or examination of the product. This policy is based on an international standard that has been mistakenly applied and was never intended to serve as a sole criterion for judging the acceptability or rejection of a frozen food consignment. WTO Agreements require that rejection of products in trade are based on scientifically supportable evidence of a product's unacceptability such as the evidence produced from a laboratory analysis of a properly drawn representative sample. The recording of a single temperature reading at the time of arrival does not provide any more evidence than a simple visual observation that the product is or is not frozen. Thermograph records, which indicate the temperature at hourly intervals throughout the entire shipment period, are most likely to be more informative in this regard than a single temperature measurement at the time of arrival.

SELECTIVE SAMPLING USING A RISK BASED SYSTEM

Modern approaches to food control as it applies to assuring food safety depends in large measure on providing the appropriate level of protection against known and potential food hazards. A risk based sampling system allows for the maximum amount of available resources to be concentrated on eliminating or reducing the highest levels consumer risk to acceptable levels. To implement this approach, an assessment is needed of the risks associated with the hazards in the food supply. This includes the identification and characterization of the hazards and estimating the exposure to these hazards to further characterize the risk. Those risk characterized as having the greatest impact and severity on consumer health are targeted as high priority and necessary resources are concentrated on appropriate measures developed to managed and control these risks.

Data and information is needed to implement the risk-based sampling system. However, it need not be a complicated process. A great deal can be accomplished quickly by relying on available known information. Applying basic knowledge related to the hazards known to be associated with food can also make the process simple. Simple solutions are often the best solutions. A comprehensive body of information is available related to most known hazards associated with various foods.

Hazards are classified into three different categories. The first is **physical** hazards. These hazards are usually physical objects in food. These include stones, pits, shells, grit, and production debris such as glass, pieces of metal, and other physical substances that can cause injury. Although many physical hazards can cause injury during ingestion, most of these hazards are not life threatening. Some may be large enough however to become lodged in the airway of the victim, were immediate attention is required.

The second category is **Chemical** hazards. These hazards usually are associated with agricultural practices, industrial pollution, chemical additives, toxic substances developed from biological agents (mold, bacteria, toxic plant materials,) production failures, accidental contamination and storage and handling practice failures. Unless these substances are in food at levels, which can cause acute reactions upon ingestion, the risks are associated with low level and long term exposure and can be considered as sever. Risk assessment in the case of these substances is more complex and requires epidemiological data, dose response information, short and long term toxicological studies, and intake/exposure data. However, information on most food contaminants is available. Risk assessments have already been done on most food chemical hazards by independent scientific committees at the international and national levels, and by governmental, institutional and private sectors. The results have been published for general use. Suggested reference include Proceedings of the Joint FAO/WHO Expert Committee on Food Additives and Contaminants {JECFA}, Codex Alimentarius Commission, European Union Committee on Food Safety, US Food and Drug Administration, US Environmental Protection Agency, US National Academy of Science and National Research Council, and a host of private sector institutions).

The third category is **Biological** hazards. These hazards are biological agents including pathogenic microbiological contaminants. Many are ubiquitous in nature and some can cause sever health consequences, even death. The hazards are rather

well known and information is readily available on the various species. The dose response is not always clear for biological agents due to the many variables that apply including the variability that exist in immune response by victims and the virulence of the agent. At this time, not any microbiological criteria for food have been developed that are truly supportable by scientific evidence. None exist at the international level. The development of microbiological criteria may not be totally possible, consequently, other measures are being employed such as the use of the Hazard Analysis Critical Control Point (HACCP) system for food safety. Such systems incorporate a biological kill step in the food production, which when controlled with time and temperature controls, assures safe product.

It has long been known that food-sampling methods are generally inadequate to appropriately identify unacceptable products. For most food sampling programs, the sample quantity is insufficient to provide a suitable level of probability that prevents unacceptable products from being accepted. In many cases when defect levels are very low, sample quantity must be near destructive sampling levels to provide an appropriate level of probability of preventing the acceptance of lots that are unacceptable. Consequently, control measures that are not dependent on sampling programs such as sampling products that are imported are ineffective as a mean of controlling risk.

To overcome this ineffectiveness, food control officials worldwide must become partners in their efforts to enhance food safety. To start with, food control officials of trading partners should look for ways to become partners in food safety from exporting to importing. Actions needed are exchanging information, accepting certification from exporting countries related to food safety control, production practices of suppliers and manufactures, adopting harmonized requirements, holding joint meetings and discussions, communication with each other on matters of concern, and where needed sponsor training and education programs. These activities are means by which joint confidence is built and can enhance the trade in safe products. Communications on a regular basis to exchange important information such as the laboratory findings of exporting countries products, rejected imported products, suppliers, and shippers, can assist exporting countries in managing food safety of exported foods. Most important is the verification of important information that may be called into question at the time of a controversy.

Application of a Risk based system for imported food products in Jordan

Review of the data available from the analysis of food products imported into Jordan can provide useful information in deciding future monitoring needs. From the data provided earlier in this document, it is clear that imported products are not a major source of food borne risk. Total rejected products form imported sources is less than 1% of the total number of consignments. When this data is purged of the number of products rejected for non-safety problems, the rejection rate is about 0.20 %. At this level of defect, there is no scientific support or justification for a 100% sampling program for imported foods. Over the past three years, various groups of products have been identified as those products that present the higher level of probability to be unsuitable for acceptance. These include frozen and chilled meats, (including poultry) and frozen fish. The data show that these products are equally likely to be rejected for

unacceptable shipping temperatures at the time of arrival without any examination, sampling or laboratory determination that the products are unsafe or unsuitable for human consumption (approximately 45-50% of all rejected frozen meat and fish products are rejected solely on the basis of arrival temperature).

Other products include dairy product, dates, coffee, confectionery and candy products, and miscellaneous food product. The volumes of these products are relatively low and the rejections are primarily due to violation of specifications. Consequently, they do not impact on the data as influencing factors in food safety risks from imported food sources.

RECOMMENDATION

Jordan should consider the implementation of a risk-based system for food safety monitoring of imported food products.

Food control officials should conduct a comprehensive review of the past records of rejected imported foods to assist in the development of a risk-based import-monitoring program.

Food control officials should recognize the ineffectiveness of food sampling measures as a means of assuring food safety and are encouraged to seek alternative means of control.

External Actions

Suggestions for alternative measures to external sources outside of Jordan include:

Seeking avenues of communications with food control officials controlling exported food shipments to Jordan;
Harmonizing food safety requirements with exporting officials and industries, exchanging information related to defective and rejected products;
Seek equivalence and mutual recognition agreements with trading partner countries.

Internal Actions

Suggestions for alternative measures for internal actions include:

Institute an Import Inspection Program calling for the inspection by physical observation and examination of imported consignments as a criterion for acceptance of the consignment rather than sampling and laboratory analysis;
Imported food controls should be based on the relevant level of food safety risk represented by the food products. Three levels are suggested – "none to low risk", "moderate risk", and "high risk";
For “no to low risk” products reduce the level of the sampling to those consignments found to be suspicious based on the inspection findings;

For “moderate” risk products, reduce the level of sampling to 10-20 percent of the number of consignments (1or 2 samples for 10 shipments) for monitoring purposes;

For “high risk” products, sample each consignment, if warranted by historical data, industry compliance performance information, shipper and country information and the results of any external relationships with the food control officials of the exporting country, in which case adjustments can be made accordingly.

Considering that sampling of each lot and each production day is no more effective that collecting a truly random sample of sufficient quantity to represent the entire consignment, the number of samples per consignment can be reduced without sacrificing the effectiveness of the sampling;

Sampling for bulk packages (large size blocks or containers) or cases should be done under appropriate conditions that will reflect the condition of the product and not be contaminated during the sampling process.

Samples should be collected only under controlled condition. For container shipments they should either be “stripped” (emptied so that the entire shipment can be examined and the sample collected with access to the entire lot.

For frozen products, sample should consist of a portion of the package if in bulk containers or large size packages (2.5 Kilograms or above) or intact packages if under 2.5 Kg. If portions are drawn, they should be done aseptically and in appropriate facilities that prevent environmental contamination.